



SEQUENCE LISTING

<110> McGill University
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<120> LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS THEREOF AND METHODS USING SAME TO ASSESS, DIAGNOSE, PROGNOSIS OR TREAT EPILEPSY

<130> GOUD:023US

<140> 09/718,355

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<150> 60/167,623

<151> 1999-11-26

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<170> PatentIn version 3.2

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<400> 3

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		20						25					30		

Lys	Ala	Lys	Asn	Pro	Lys	Pro	Asp	Lys	Lys	Asp	Asp	Asp	Glu	Asn	Gly
		35					40					45			

Pro	Lys	Pro	Asn	Ser	Asp	Leu	Glu	Ala	Gly	Lys	Asn	Leu	Pro	Phe	Ile
	50					55					60				

Tyr	Gly	Asp	Ile	Pro	Pro	Glu	Met	Val	Ser	Glu	Pro	Leu	Glu	Asp	Leu
65						70				75				80	

Asp	Pro	Tyr	Tyr	Ile	Asn	Lys	Lys	Thr	Phe	Ile	Val	Leu	Asn	Lys	Gly
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

85

90

95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
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Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg
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Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
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Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp
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Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
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Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
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Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
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Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu
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Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu
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Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
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Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
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Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
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Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
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Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
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Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
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Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
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Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
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Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
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Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
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Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
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Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
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Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
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Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
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Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
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Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
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Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
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Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe
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Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
835 840 845

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Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
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Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
885 890 895

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Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
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Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
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Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
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995

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Ile	Arg	Lys	Gln	Lys	Ile	Leu	Asp	Glu	Ile	Lys	Pro	Leu	Asp	Asp
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Glu	Ser	Asp	Tyr	Met	Ser	Phe	Ile	Asn	Asn	Pro	Ser	Leu	Thr	Val
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Thr	Val	Pro	Ile	Ala	Val	Gly	Glu	Ser	Asp	Phe	Glu	Asn	Leu	Asn
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Thr	Glu	Asp	Phe	Ser	Ser	Glu	Ser	Asp	Leu	Glu	Glu	Ser	Lys	Glu
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Lys	Leu	Asn	Glu	Ser	Ser	Ser	Ser	Ser	Glu	Gly	Ser	Thr	Val	Asp
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Ile	Gly	Ala	Pro	Val	Glu	Glu	Gln	Pro	Val	Val	Glu	Pro	Glu	Glu
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Phe	Lys	Cys	Cys	Gln	Ile	Asn	Val	Glu	Glu	Gly	Arg	Gly	Lys	Gln
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Trp	Phe	Glu	Thr	Phe	Ile	Val	Phe	Met	Ile	Leu	Leu	Ser	Ser	Gly
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Leu	Ile	Glu	Arg	Asn	Glu	Thr	Ala	Arg	Trp	Lys	Asn	Val	Lys	Val
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Asn	Phe	Asp	Asn	Val	Gly	Phe	Gly	Tyr	Leu	Ser	Leu	Leu	Gln	Val
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Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp
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Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Glu Ser Leu Tyr
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Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe
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Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu
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Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser
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Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser
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Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp
1790 1795 1800

Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp
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Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala
1820 1825 1830

Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln
1835 1840 1845

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly
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Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
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Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
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Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
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Leu Asp Phe Thr Val Ile Thr Phe Ala Phe Val Thr Glu Phe Val Asn
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Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
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Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
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Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
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Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
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Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu

485

490

495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
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Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
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Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
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Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
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Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
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Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
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Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe
770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
930 935 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
945 950 955 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
965 970 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
980 985 990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
995 1000 1005

Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val
1010 1015 1020

Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe
1025 1030 1035

Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp
1040 1045 1050

Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Ala Glu
1055 1060 1065

Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr
1070 1075 1080

Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp
1085 1090 1095

Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val
1100 1105 1110

Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn
1115 1120 1125

Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu
1130 1135 1140

Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp
1145 1150 1155

Ile	Gly	Ala	Pro	Val	Glu	Glu	Gln	Pro	Val	Val	Glu	Pro	Glu	Glu
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Thr	Leu	Glu	Pro	Glu	Ala	Cys	Phe	Thr	Glu	Gly	Cys	Val	Gln	Arg
1175						1180					1185			
Phe	Lys	Cys	Cys	Gln	Ile	Asn	Val	Glu	Glu	Gly	Arg	Gly	Lys	Gln
1190						1195					1200			
Trp	Trp	Asn	Leu	Arg	Arg	Thr	Cys	Phe	Arg	Ile	Val	Glu	His	Asn
1205						1210					1215			
Trp	Phe	Glu	Thr	Phe	Ile	Val	Phe	Met	Ile	Leu	Leu	Ser	Ser	Gly
1220						1225					1230			
Ala	Leu	Ala	Phe	Glu	Asp	Ile	Tyr	Ile	Asp	Gln	Arg	Lys	Thr	Ile
1235						1240					1245			
Lys	Thr	Met	Leu	Glu	Tyr	Ala	Asp	Lys	Val	Phe	Thr	Tyr	Ile	Phe
1250						1255					1260			
Ile	Leu	Glu	Met	Leu	Leu	Lys	Trp	Val	Ala	Tyr	Gly	Tyr	Gln	Thr
1265						1270					1275			
Tyr	Phe	Thr	Asn	Ala	Trp	Cys	Trp	Leu	Asp	Phe	Leu	Ile	Val	Asp
1280						1285					1290			
Val	Ser	Leu	Val	Ser	Leu	Thr	Ala	Asn	Ala	Leu	Gly	Tyr	Ser	Glu
1295						1300					1305			
Leu	Gly	Ala	Ile	Lys	Ser	Leu	Arg	Thr	Leu	Arg	Ala	Leu	Arg	Pro
1310						1315					1320			
Leu	Arg	Ala	Leu	Ser	Arg	Phe	Glu	Gly	Met	Arg	Val	Val	Val	Asn
1325						1330					1335			
Ala	Leu	Leu	Gly	Ala	Ile	Pro	Ser	Ile	Met	Asn	Val	Leu	Leu	Val
1340						1345					1350			
Cys	Leu	Ile	Phe	Trp	Leu	Ile	Phe	Ser	Ile	Met	Gly	Val	Asn	Leu
1355						1360					1365			
Phe	Ala	Gly	Lys	Phe	Tyr	His	Cys	Ile	Asn	Thr	Thr	Thr	Gly	Asp

1370		1375		1380
Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys				
1385		1390		1395
Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val				
1400		1405		1410
Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val				
1415		1420		1425
Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp				
1430		1435		1440
Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Glu Ser Leu Tyr				
1445		1450		1455
Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe				
1460		1465		1470
Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln				
1475		1480		1485
Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu				
1490		1495		1500
Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys				
1505		1510		1515
Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met				
1520		1525		1530
Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met				
1535		1540		1545
Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp				
1550		1555		1560
Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu				
1565		1570		1575
Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile				
1580		1585		1590

Ser	Leu	Arg	His	Tyr	Tyr	Phe	Thr	Ile	Gly	Trp	Asn	Ile	Phe	Asp
1595						1600					1605			
Phe	Val	Val	Val	Ile	Leu	Ser	Ile	Val	Gly	Met	Phe	Leu	Ala	Glu
1610						1615					1620			
Leu	Ile	Glu	Lys	Tyr	Phe	Val	Ser	Pro	Thr	Leu	Phe	Arg	Val	Ile
1625						1630					1635			
Arg	Leu	Ala	Arg	Ile	Gly	Arg	Ile	Leu	Arg	Leu	Ile	Lys	Gly	Ala
1640						1645					1650			
Lys	Gly	Ile	Arg	Thr	Leu	Leu	Phe	Ala	Leu	Met	Met	Ser	Leu	Pro
1655						1660					1665			
Ala	Leu	Phe	Asn	Ile	Gly	Leu	Leu	Leu	Phe	Leu	Val	Met	Phe	Ile
1670						1675					1680			
Tyr	Ala	Ile	Phe	Gly	Met	Ser	Asn	Phe	Ala	Tyr	Val	Lys	Arg	Glu
1685						1690					1695			
Val	Gly	Ile	Asp	Asp	Met	Phe	Asn	Phe	Glu	Thr	Phe	Gly	Asn	Ser
1700						1705					1710			
Met	Ile	Cys	Leu	Phe	Gln	Ile	Thr	Thr	Ser	Ala	Gly	Trp	Asp	Gly
1715						1720					1725			
Leu	Leu	Ala	Pro	Ile	Leu	Asn	Ser	Lys	Pro	Pro	Asp	Cys	Asp	Pro
1730						1735					1740			
Asn	Lys	Val	Asn	Pro	Gly	Ser	Ser	Val	Lys	Gly	Asp	Cys	Gly	Asn
1745						1750					1755			
Pro	Ser	Val	Gly	Ile	Phe	Phe	Phe	Val	Ser	Tyr	Ile	Ile	Ile	Ser
1760						1765					1770			
Phe	Leu	Val	Val	Val	Asn	Met	Tyr	Ile	Ala	Val	Ile	Leu	Glu	Asn
1775						1780					1785			
Phe	Ser	Val	Ala	Thr	Glu	Glu	Ser	Ala	Glu	Pro	Leu	Ser	Glu	Asp
1790						1795					1800			

Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp
1805 1810 1815

Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala
1820 1825 1830

Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln
1835 1840 1845

Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His
1850 1855 1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu
1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe
1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr
1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln
1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala
1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu
1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser
1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro
1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu
1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys
2000 2005

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<211> 850
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gcaaggagaa gcaatactgg gagattacag agaagaaagg aaaaaaggct gagagaaaag 180
aggttgagga agaaatcata aatctggatt gtgagaaagt gtttaatat tagccactag 240
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gaggctctctg gtgcatgtgt gtatgtgtgc gtttgtgtgt gtttgtgtgt ctgtgtgttc 420
tgccccagtg agactgcagc ccttgtaaact actttgacac cttttgcaag aaggaatctg 480
aacaattgca actgaaggca cattgttatc atctcgtctt tgggtgatgc tgttcctcac 540
tgcatgatga taattttcct tttaatcagg taagccatct aattgtttca tcttgatttt 600
aagtttattc attccagtta ttcctttgga aaaagagtcc atggaaattc agtttgggca 660
gagcaggaag tccatttttg tatgtgtatt cagaccaact gtccccctcc tccctctcct 720
cctcttcttg tccccctccc cgcgccctcc tctctcaacc ttccatgaac tgaaatcagg 780
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catctggcca 850

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<211> 483
<212> DNA
<213> Homo sapiens

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caggacctga cagcttcaac ttcttcacca gagaatctct tgccggctatt gaaagacgca 180
ttgcagaaga aaaggcaaag aatcccaaac cagacaaaaa aagatgacga cgaaaaatgg 240
cccaaagcaa atagtgactt ggaagctgga aagaaccttc catttattta tggagacatt 300
cctccagaga tgggtgtcaga gcccctggag gacctggacc cctactatat caataagaaa 360
gtgagtgttt tttttatcag gcatattttt gctgctaatt gcctactgca ttccttggac 420

tgtttagca ccaacacatg ccaatagcac aaatctagta tctctgtag aatgaacaca	480
ttt	483

<210> 7
 <211> 497
 <212> DNA
 <213> Homo sapiens

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agtttaagtg gtttatactt tcatacttct atgttggtgtt cctgtcttac agacttttat	180
agtattgaat aaaggggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatttt	240
aactcccttc aatcctctta ggaaaatagc tattaagatt ttggtacatt catatccttt	300
ttcaagtgat taatattaac tatttgtaca tgatctgtaa gcactttata gctaaatata	360
aaattaagtt gggaaatgtc catattatat aggtttcatc actctcattt tgcacttttg	420
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 <212> DNA
 <213> Homo sapiens

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tatccctgaa ttttggttaa gctgcagttt gggcttttca atgttagctt tttgtaatat	180
aacacttgga ttttgatttt cttttgtgtg ttccttaaca ataacctaca ttattcagca	240
tgctaattat gtgcactatt ttgacaaact gtgtgtttat gacaatgagt aaccctcctg	300
attggacaaa gaatgtagag taagttcaac ttatatTTTT aataacatat atacattygg	360
gattytgaaa ctgtgtctta atgtagtctt aaaataaaac tgaagagcat tttattaaag	420
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 <211> 563

<212> DNA
<213> Homo sapiens

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aaaatccatc tgcttagttt tcttttttag tatttatcta ttccactgat ggagtataa 180
gaaattggta tgctatgaaa aaacactgtt actttatcaa attttttga tgcttgtttt 240
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attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttcactgt 360
cattacattt gcgtaagtgc ctttbytgaa actttaagag agaacatagt ttggttttcc 420
atcagtgtt atgcttttaa gaatagggtt gctttacctg tagaatattt ttgtgtgatt 480
tatacattca aactctggat ttcaatttag cacaacaaag gtctaagtgg aatttcacta 540
tagcatgaag gctttgcagt agt 563

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<211> 253
<212> DNA
<213> Homo sapiens

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agtcttgaga gctttgaaaa ctatttcggt aattccaggt aagaagtgat tagagtaaag 180
gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa 240
ctcccgctta cag 253

<210> 11
<211> 340
<212> DNA
<213> Homo sapiens

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tgtttttgtg tttgtgtgtg aactcccgct tacaggtagc tcacagagtt tgtggacctg 120
ggcaatgtct cggcattgag aacattcaga gttctccgag cattgaagac gatttcagtc 180
attccaggtg agagcaaggt tagataatga gacggaccca tcatgtgatt cagcatcctt 240
ctctgcttga cattcagttt tacagaaaat caggaatcat aagactaggt gttcaaagaa 300

atgattatta tgttagacat agcttatcag cctggagtta 340

<210> 12
<211> 409
<212> DNA
<213> Homo sapiens

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tgagcgtatt tgctctaatt gggctgcagc tgttcatggg caacctgagg aataaatgta 180
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<211> 266
<212> DNA
<213> Homo sapiens

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cgactttctt ttttcaaaca ggatatcatt atttcctgga gggtttttta gatgcactac 180
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<210> 14
<211> 604
<212> DNA
<213> Homo sapiens

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gaaatagatt agttacttat ttgtcaaact tttattttga aataccaaat ctttctgact 180
aggcaatatc atagcatagt atcagagtaa aaaggcagca gaacgacttg taatactttc 240
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cccaattatg gctacacaag ctttgatacc ttcagttggg cttttttgtc cttgtttcga	360
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ataacacata ctgagcagag tgatgccaag gattgcaatt ctctcccatt tcttcttggc	600
tcaa	604

<210> 15
 <211> 378
 <212> DNA
 <213> Homo sapiens

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acatgatatt ttttgtattg gtcattttct tgggctcatt ctacctaata aatttgatcc	180
tggctgtggt ggccatggcc tacgaggaac agaatcaggc caccttgga gaagcagaac	240
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 <212> DNA
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cataataaat gttaccatgg agcaaaactaa attatctcca aaagccttca ttaggtagaa	180
agaaaaaaaa aatctcctct tataacttgca gagaatcttc tctgtgagat gatcttcagt	240
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gtctcttcag gtgctatgtt aaaatcattt ctcttcaata tagcaggcag caacggcaac	360
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agcctctaag ttgagttcca agagtgctaa ggaaagaaga aatcggagga agaaaagaaa	480

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aactgaatca accactgttg tggttatattt aaacccatcc cttcttcaca tagttatgca	780
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tgaca	845

<210> 17
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 <212> DNA
 <213> Homo sapiens

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taatcccaag ggctagaaac tttcttttat caaggtaatt taatttaatg tgaatgcaca	180
taaaatgaga atgataatca aaaggaatga accatattct gttatgaatg ctgaaatctc	240
cttctacata atcttgcaaa atgaaatcac attcaaatgt ccatattaat atgactctat	300
ttgtbtgctc tttcaaaact ctagtctttg ttgagcatcc gtggctccct attttcacca	360
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gagaacgact tcgcagatga tgagcacagc acctttgagg ataacgagag ccgtagagat	480
tccttgtttg tgccccgacg acacggagag agacgcaaca gcaacctgag tcagaccagt	540
aggtcatccc ggatgctggc agtgtttcca gcgaatggga agatgcacag cactgtggat	600
tgcaatggtg tgggttcctt ggttggtgga cttcagttc ctacatcgcc tgttgacag	660
cttctgccag aggtgataat agataagcca gctactgatg acaatgtaag gaagtyttaa	720
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accttgagaa tgattcctgg ttggtcacgc tgtgaatgca cctgcatctt gtaatatctt	840
tgatagacta accaactaaa acttaaaacc ttagcagtcg cctgcacaaa cctgaatgca	900
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<211> 641
<212> DNA
<213> Homo sapiens

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<210> 19
<211> 818
<212> DNA
<213> Homo sapiens

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ataaccttgg gaggtttaga gtaaactgta atttttttta caagtacaaa aaaggggtgtc 180
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gtgtataaag tawacctttt ggtgggtctt tttttttttt ttcttaatct agaacttgaa 300
gaatccaggc agaaatgccc accctgttgg tataaatttt ccaacatatt cttaatctgg 360
gactgttctc catattgggt aaaagtgaac catgttgtca acctgggtgt gatggacca 420
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cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata 540
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tgtgtatagc agtctttcaa ccaccttca tgcttctctgg cccctgcaaa atcgcaatta 660
tatttagctg gctatactct acttttttgc caaaaataat cacccttaat gtgctcacia 720

aaactgagaa aggcataaggc ctacagcact acttgaaaag tcaacagcaa tatttataat	780
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<210> 20
 <211> 645
 <212> DNA
 <213> Homo sapiens

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aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata	180
agcattatgt tctaagagca aatcttatgt catgtatgtt attatctggt ggaattagat	240
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ttattgccat ggatccttac tattatttcc aagaaggctg gaatatcttt gacggtttta	360
ttgtgacgct tagcctggta gaacttggac tcgccaatgt ggaagggtta tctgttctcc	420
gttcatttcg attggtaaaa aaaaaaaaaa aaggaaccaa attcaaaaac ctttctaaca	480
ttcaggggttc ttgcatagca ttgtcatagt ttttttgcca cacaaccatt aggcatgtga	540
agtttttctg taacatttgc attgtcaaaa acttttctta catgggaata attctcaatt	600
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<210> 21
 <211> 829
 <212> DNA
 <213> Homo sapiens

<400> 21	
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aaatatatat taatctttca ttttccagct gcgagatttc aagttggcaa aatcttggcc	120
aacgttaaatt atgctaataa agatcatcgg caattccgtg ggggctctgg gaaatttaac	180
cctcgtcttg gccatcatcg tcttcatttt tgccgtggtc ggcatgcagc tctttggtaa	240
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gaatgacttc ttccactcck hcctgattgt gttccgcgtg ctgtgtgggg agtggataga	360
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caccagcatg gcacatgtat acatatgtaa ctaacctgca cattgtgcac atgtacccta	540
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aaaaacaaac tatgattatt ggtttaaaag tccattacct tggatatatt atcactttaa	660
caacacagca atatabcagt gccctgcat tttttatacc aaattctatt ttgtcagtca	720
ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg	780
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<210> 22
 <211> 909
 <212> DNA
 <213> Homo sapiens

<400> 22	
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agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca	180
tcttctaate actatgctgt ggtgtttect tctcatcaag ttttagaact tagagttttt	240
tccacactta aaagaaagaa taagtgattg taatctgctc ttcctacat tgggtgtaaaa	300
ttataatcat gtttttgttg tttttaaggt cctgaatctc tttctggcct tgcttctgag	360
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tattcaacag tccttcatta ggaaacaaaa gatttttagat gaaattaaac cacttgatga	540
tctaaacaac aagaaagaca gttgtatgtc caatcataca gcagaaattg ggaaagatct	600
tgactatctt aaagatgtaa atggaactac aagtggata ggaactggca gcagtgttga	660
aaaatacatt attgatgaaa gtgattacat gtcattcata aacaaccca gtcttactgt	720
gactgtacca attgctgtag gagaatctga ctttgaaaat ttaaacacgg aagactttag	780
tagtgaatcg gatctggaag aaagcaaaga ggtaagattc tatagggtgtg ggtaggtatg	840
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tacttaaga	909

<210> 23
 <211> 516
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (393)..(393)
 <223> n = a, c, t or g

<220>
 <221> misc_feature
 <222> (415)..(415)
 <223> N = a, c, t or g

<220>
 <221> misc_feature
 <222> (454)..(454)
 <223> N = a, c, t or g

<220>
 <221> misc_feature
 <222> (513)..(513)
 <223> n = a, c, t or g

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 aaattcatag taataatcct tcttggcagg caacttatta ccaaaattaa ggactttact 180
 ttctatgtcc atctcactta cagaaactga atgaaagcag tagctcatca gaaggtagca 240
 ctgtggacat cggcgcacct gtagaagaac agcccgtagt ggaacctgaa gaaactcttg 300
 aaccgaagc ttgtttcact gaaggtaaag aaaagaatcc taatgttaat ctttcatttg 360
 gagtgcagct tatttagctg ttggtcagct aanataaatc acatataata aaatngcact 420
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 agtgtcatgc tttgattata tctgcccaat atntgg 516

<210> 24
 <211> 640
 <212> DNA
 <213> Homo sapiens

<400> 24
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 actctaggct tagagagcta tgctagcaag acagagatga gcatagtaat aaaaagacaa 120
 gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca 180
 acactttctg caggctgtgt acaaagattc aagtgttgtc aaatcaatgt ggaagaaggc 240
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taagaagcta atcattaatt tttgcttact attaaatagc ccagaaagtg tagcccttca	600
gcttattcat taacaccaa ggatgtgaat attcaattac	640

<210> 25
 <211> 607
 <212> DNA
 <213> Homo sapiens

<400> 25	
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ttgcgaggaa aaaaaaaaaag taacagtaac tactgtttct ctgccctcct attccaatga	180
aatgtcatat gcatatgatt aatTTTTTaa atagcttatg gagtataatt atttttgaaa	240
gctaataatg tgtaacattt tctttatagg catttgaaga tatatatatt gaycagcgaa	300
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aaatgcttct aaaatgggtg gcatatggct atcaaacata tttaccaat gcctggagtt	420
ggctggactt cttaattggt gatgtaggta tcgttcatat tttgtctct gttcaaggta	480
gcttgtctta tttatattca aattctacaa tagtgagtct cagaccacta tgttatgttg	540
acagactata atarccacta aacgcatata tgcaatgaga gtgtcatttc tggaagacaa	600
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<210> 26
 <211> 336
 <212> DNA
 <213> Homo sapiens

<400> 26	
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ttactcagaa cttggagcct atcaatctct caggacacta agagctctga gacctctaag	180
agccttatct cgatttgaag ggatgagggt aagaaaaatg aaagaacctg aagtattgta	240
tatagccaaa attaaactaa attaaattta gaaaaaagga aaaatgtatg catgcaaaag	300

gaatggcaaa ttcttgcaaa atgctcttta ttgttt 336

<210> 27

<211> 677

<212> DNA

<213> Homo sapiens

<400> 27

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aaagaatgga aagaccagag attactaggg gaattttttt tctttattaa cagataagaa 180
ttctgacttt tctttttttc catttggtga ttaggtgggt gtgaatgcc ttttaggagc 240
aattccatcc atcatgaatg tgcttctggt ttgtcttata ttctggctaa ttttcagcat 300
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caggtttgac atcgaagacg tgaataatca tactgattgc ctaaaactaa tagaaagaaa 420
tgagactgct cgatggaaaa atgtgaaagt aaactttgat aatgtaggat ttgggtatct 480
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aataacaaaa taatgacata catctattat ttagttccta agaaaaagta tatatttctt 600
tctatttaaa aaatttcaat ttgttagtac aagtttatga gccagatgg gtgaaaactt 660
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<210> 28

<211> 457

<212> DNA

<213> Homo sapiens

<400> 28

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aacatgcatg tccttcttaa taggccacat tcaaaggatg gatggatata atgtatgcag 240
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aaaatatttg ggaaaaagtg tgacaggtaa atattcaagc atagcaatgt ttatcagaaa 420
gatcttacta agataattca acacatgaat tattttg 457

<210> 29
<211> 379
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (43)..(43)
<223> n = a, c, t or g

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gaaaaattat tccttgaggt gttttctctg ccaaagaggt acttgaattt agaacaaatg 360
ggagtatata ttataactg 379

<210> 30
<211> 393
<212> DNA
<213> Homo sapiens

<400> 30
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gccatccatt ttctatttta acattgaaaa aaatgtacaa aaggacacag ttttaaccag 180
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aaatactata atgcaatgaa aaaattagga tcgaaaaaac cgcaaaagcc tatacctcga 300
ccaggagtaa gaagtatcaa atgatatggg ggaaaataca aaaacaaaaa ctgcatgctt 360
gtctcacaaa aaagaaaagt aagctaaaca ttt 393

<210> 31
<211> 539
<212> DNA
<213> Homo sapiens

<400> 31
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aactcctttg ttgttaaaag catttctatt tctctacaga acaaatttca aggaatggtc	180
tttgacttcg taaccagaca agtttttgac ataagcatca tgattctcat ctgtcttaac	240
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aaacaatcaa gattagattc aagatcatcc cagcaatcag agataatcac tgtaaatat	539

<210> 32
 <211> 3403
 <212> DNA
 <213> Homo sapiens

<400> 32	
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attctcattg ttatttcata ggtatgtttc ttgccgagct gatagaaaag tatttcgtgt	180
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<210> 33

<211> 8349

<212> DNA

<213> Homo sapiens

<400> 33

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ctggtagcgc caggacctga cagcttccgc ttctttacca gggaatccct tgctgctatt	180
gaacaacgca ttgcagaaga gaaagctaag agacccaaac aggaacgcaa ggatgaggat	240
gatgaaaatg gcccaaagcc aaacagtgc ttggaagcag gaaaatctct tccatttatt	300
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accctgccc ttacatttt aactcccttc aaccctatta gaaaattagc tattaagatt	480
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<400> 35

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 35 40 45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
 50 55 60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
 65 70 75 80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
 85 90 95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
100 105 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
115 120 125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145 150 155 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205

Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
210 215 220

Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
245 250 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
260 265 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
275 280 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
290 295 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
305 310 315 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
325 330 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
340 345 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
355 360 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
370 375 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385 390 395 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
405 410 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
420 425 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
435 440 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
450 455 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465 470 475 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
485 490 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
500 505 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
515 520 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
530 535 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
565 570 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
610 615 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
645 650 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
660 665 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
675 680 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
690 695 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705 710 715 720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
725 730 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
740 745 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
755 760 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr

770

775

780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
 785 790 795 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
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Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
 820 825 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
 835 840 845

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
 850 855 860

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 865 870 875 880

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
 885 890 895

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 900 905 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
 915 920 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 930 935 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
 945 950 955 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
 965 970 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
 980 985 990

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
 995 1000 1005

Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu
1010 1015 1020

Phe Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu
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Ile Lys Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile
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Ser Asn His Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu
1055 1060 1065

Lys Asp Gly Asn Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu
1070 1075 1080

Lys Tyr Val Val Asp Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn
1085 1090 1095

Pro Ser Leu Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp
1100 1105 1110

Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Asp Met
1115 1120 1125

Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly
1130 1135 1140

Ser Thr Val Asp Ile Gly Ala Pro Ala Glu Gly Glu Gln Pro Glu
1145 1150 1155

Val Glu Pro Glu Glu Ser Leu Glu Pro Glu Ala Cys Phe Thr Glu
1160 1165 1170

Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile Ser Ile Glu Glu
1175 1180 1185

Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr Cys Tyr Lys
1190 1195 1200

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile
1205 1210 1215

Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu
1220 1225 1230

Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val
1235 1240 1245

Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala
1250 1255 1260

Tyr Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp
1265 1270 1275

Phe Leu Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala
1280 1285 1290

Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu
1295 1300 1305

Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met
1310 1315 1320

Arg Ala Val Val Asn Ala Leu Leu Gly Ala Ile Pro Ser Ile Met
1325 1330 1335

Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile
1340 1345 1350

Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Ile Asn
1355 1360 1365

Tyr Thr Thr Gly Glu Met Phe Asp Val Ser Val Val Asn Asn Tyr
1370 1375 1380

Ser Glu Cys Lys Ala Leu Ile Glu Ser Asn Gln Thr Ala Arg Trp
1385 1390 1395

Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Leu Gly Tyr Leu
1400 1405 1410

Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met
1415 1420 1425

Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr
1430 1435 1440

Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile
1445 1450 1455

Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile
1460 1465 1470

Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile
1475 1480 1485

Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys
1490 1495 1500

Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn
1505 1510 1515

Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe
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Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met
1535 1540 1545

Met Val Glu Thr Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu
1550 1555 1560

Tyr Trp Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys
1565 1570 1575

Val Leu Lys Leu Ile Ser Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly
1580 1585 1590

Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile Val Gly
1595 1600 1605

Met Phe Leu Ala Glu Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr
1610 1615 1620

Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
1625 1630 1635

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu

1640		1645		1650
Met Met	Ser Leu Pro Ala	Leu Phe Asn Ile Gly	Leu Leu Leu Phe	
1655		1660	1665	
Leu Val	Met Phe Ile Tyr Ala	Ile Phe Gly Met Ser	Asn Phe Ala	
1670		1675	1680	
Tyr Val	Lys Arg Glu Val Gly	Ile Asp Asp Met Phe	Asn Phe Glu	
1685		1690	1695	
Thr Phe	Gly Asn Ser Met Ile	Cys Leu Phe Gln Ile	Thr Thr Ser	
1700		1705	1710	
Ala Gly	Trp Asp Gly Leu Leu	Ala Pro Ile Leu Asn	Ser Gly Pro	
1715		1720	1725	
Pro Asp	Cys Asp Pro Asp Lys	Asp His Pro Gly Ser	Ser Val Lys	
1730		1735	1740	
Gly Asp	Cys Gly Asn Pro Ser	Val Gly Ile Phe Phe	Phe Val Ser	
1745		1750	1755	
Tyr Ile	Ile Ile Ser Phe Leu	Val Val Val Asn Met	Tyr Ile Ala	
1760		1765	1770	
Val Ile	Leu Glu Asn Phe Ser	Val Ala Thr Glu Glu	Ser Ala Glu	
1775		1780	1785	
Pro Leu	Ser Glu Asp Asp Phe	Glu Met Phe Tyr Glu	Val Trp Glu	
1790		1795	1800	
Lys Phe	Asp Pro Asp Ala Thr	Gln Phe Ile Glu Phe	Ala Lys Leu	
1805		1810	1815	
Ser Asp	Phe Ala Asp Ala Leu	Asp Pro Pro Leu Leu	Ile Ala Lys	
1820		1825	1830	
Pro Asn	Lys Val Gln Leu Ile	Ala Met Asp Leu Pro	Met Val Ser	
1835		1840	1845	
Gly Asp	Arg Ile His Cys Leu	Asp Ile Leu Phe Ala	Phe Thr Lys	
1850		1855	1860	

Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
1865 1870 1875

Met Glu Glu Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr
1880 1885 1890

Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser
1895 1900 1905

Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu Leu Lys Gln
1910 1915 1920

Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys Gly Lys
1925 1930 1935

Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp Lys
1940 1945 1950

Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys
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Glu Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys
1985 1990 1995

Asp Ile Arg Glu Ser Lys Lys
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Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
35 40 45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
50 55 60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65 70 75 80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
100 105 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
115 120 125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145 150 155 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205

Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
210 215 220

Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
245 250 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly

260

265

270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
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Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
 290 295 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
 305 310 315 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
 325 330 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
 340 345 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
 355 360 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
 370 375 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
 385 390 395 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
 405 410 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
 420 425 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
 435 440 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
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Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
 465 470 475 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
 485 490 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
500 505 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
515 520 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
530 535 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
565 570 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
610 615 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
645 650 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
660 665 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
675 680 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
690 695 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705 710 715 720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
725 730 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
740 745 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
755 760 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
770 775 780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785 790 795 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
805 810 815

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
820 825 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
835 840 845

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
850 855 860

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865 870 875 880

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
885 890 895

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
900 905 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
915 920 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
930 935 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945 950 955 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
965 970 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
980 985 990

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
995 1000 1005

Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu
1010 1015 1020

Phe Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu
1025 1030 1035

Ile Lys Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile
1040 1045 1050

Ser Asn His Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu
1055 1060 1065

Lys Asp Gly Asn Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu
1070 1075 1080

Lys Tyr Val Val Asp Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn
1085 1090 1095

Pro Ser Leu Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp
1100 1105 1110

Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Asp Met
1115 1120 1125

Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly
1130 1135 1140

Ser Thr Val Asp Ile Gly Ala Pro Ala Glu Gly Glu Gln Pro Glu
1145 1150 1155

Val Glu Pro Glu Glu Ser Leu Glu Pro Glu Ala Cys Phe Thr Glu

1160		1165		1170
Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile Ser Ile Glu Glu	1175	1180		1185
Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr Cys Tyr Lys	1190	1195		1200
Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile	1205	1210		1215
Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu	1220	1225		1230
Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val	1235	1240		1245
Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala	1250	1255		1260
Tyr Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp	1265	1270		1275
Phe Leu Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala	1280	1285		1290
Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu	1295	1300		1305
Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met	1310	1315		1320
Arg Ala Val Val Asn Ala Leu Leu Gly Ala Ile Pro Ser Ile Met	1325	1330		1335
Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile	1340	1345		1350
Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Ile Asn	1355	1360		1365
Tyr Thr Thr Gly Glu Met Phe Asp Val Ser Val Val Asn Asn Tyr	1370	1375		1380

Ser Glu Cys Lys Ala Leu Ile Glu Ser Asn Gln Thr Ala Arg Trp
1385 1390 1395

Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Leu Gly Tyr Leu
1400 1405 1410

Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met
1415 1420 1425

Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr
1430 1435 1440

Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile
1445 1450 1455

Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile
1460 1465 1470

Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile
1475 1480 1485

Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys
1490 1495 1500

Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn
1505 1510 1515

Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe
1520 1525 1530

Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met
1535 1540 1545

Met Val Glu Thr Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu
1550 1555 1560

Tyr Trp Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys
1565 1570 1575

Val Leu Lys Leu Ile Ser Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly
1580 1585 1590

Trp	Asn	Ile	Phe	Asp	Phe	Val	Val	Val	Ile	Leu	Ser	Ile	Val	Gly
1595						1600					1605			
Met	Phe	Leu	Ala	Glu	Leu	Ile	Glu	Lys	Tyr	Phe	Val	Ser	Pro	Thr
1610						1615					1620			
Leu	Phe	Arg	Val	Ile	Arg	Leu	Ala	Arg	Ile	Gly	Arg	Ile	Leu	Arg
1625						1630					1635			
Leu	Ile	Lys	Gly	Ala	Lys	Gly	Ile	Arg	Thr	Leu	Leu	Phe	Ala	Leu
1640						1645					1650			
Met	Met	Ser	Leu	Pro	Ala	Leu	Phe	Asn	Ile	Gly	Leu	Leu	Leu	Phe
1655						1660					1665			
Leu	Val	Met	Phe	Ile	Tyr	Ala	Ile	Phe	Gly	Met	Ser	Asn	Phe	Ala
1670						1675					1680			
Tyr	Val	Lys	Arg	Glu	Val	Gly	Ile	Asp	Asp	Met	Phe	Asn	Phe	Glu
1685						1690					1695			
Thr	Phe	Gly	Asn	Ser	Met	Ile	Cys	Leu	Phe	Gln	Ile	Thr	Thr	Ser
1700						1705					1710			
Ala	Gly	Trp	Asp	Gly	Leu	Leu	Ala	Pro	Ile	Leu	Asn	Ser	Gly	Pro
1715						1720					1725			
Pro	Asp	Cys	Asp	Pro	Asp	Lys	Asp	His	Pro	Gly	Ser	Ser	Val	Lys
1730						1735					1740			
Gly	Asp	Cys	Gly	Asn	Pro	Ser	Val	Gly	Ile	Phe	Phe	Phe	Val	Ser
1745						1750					1755			
Tyr	Ile	Ile	Ile	Ser	Phe	Leu	Val	Val	Val	Asn	Met	Tyr	Ile	Ala
1760						1765					1770			
Val	Ile	Leu	Glu	Asn	Phe	Ser	Val	Ala	Thr	Glu	Glu	Ser	Ala	Glu
1775						1780					1785			
Pro	Leu	Ser	Glu	Asp	Asp	Phe	Glu	Met	Phe	Tyr	Glu	Val	Trp	Glu
1790						1795					1800			

Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu	1805	1810	1815
Ser Asp Phe Ala Asp Ala Leu Asp Pro Pro Leu Leu Ile Ala Lys	1820	1825	1830
Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met Val Ser	1835	1840	1845
Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys	1850	1855	1860
Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln	1865	1870	1875
Met Glu Glu Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr	1880	1885	1890
Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser	1895	1900	1905
Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu Leu Lys Gln	1910	1915	1920
Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys Gly Lys	1925	1930	1935
Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp Lys	1940	1945	1950
Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser	1955	1960	1965
Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys	1970	1975	1980
Glu Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys	1985	1990	1995
Asp Ile Arg Glu Ser Lys Lys	2000	2005	

<211> 912
 <212> DNA
 <213> Homo sapiens

<400> 37
 gaattcttta tatgggttga atgactttct gacatagcaa ataaaaagca tgaggagaag 60
 cattatctgt taacaaaatt aacacttaaa atcaacaaag ttttaatgtt tcgttccaag 120
 aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc 180
 tgtgtgtacg ctgtgaaggt gtttctcttc acagttcccc gccctctagt ggtagttaca 240
 ataatgccat tttgtagtcc ctgtacagga aatgcctctt cttacttcag ttaccagaat 300
 ccttttacag gaagttaggt gtggtctttg aaggagaatt aaaaaaaaaa aaaaaaaaaa 360
 aaaaaagatt tttttttttt taaagcatga tggaatttta gctgcagtct tcttggggcc 420
 agcttatcaa tcccaaactc tgggggtaaa agattctaca ggggtaatgt tttattattc 480
 ttattatgct tattctctgt gatgcttctc tacctttaca gtagtagaat ccttggggaa 540
 atctgcagag ggaccacttt catTTTgaag ctgctggctg catgttttag catgtctctt 600
 ctattagaga atccaggcat ggcagtttcc tccccagtg tgcaaggacc atcttcatgc 660
 ctatgtctgt cgctaggcat gagggctctc aggaatgggt gaaaaaatg agggatgttt 720
 tggaggcact ataatactgg ggagggcagt ctgctagctg gtagctgaaa ggtcctgggt 780
 tacttcaaca ttttttttaa ataaaactgt gcagtagttt ttgttatttt agggttccct 840
 ctgttttattc tgggtgatgc tgcagaagtg aactgcataa cacatttcac tcttagaaat 900
 gcattccata ta 912

<210> 38
 <211> 722
 <212> DNA
 <213> Homo sapiens

<400> 38
 ctcagtgcac gtaactgaca caatcacctc tatctaattg tcatgcttct tacctcctgt 60
 tctgtagcac tttcttatgc aaggagctaa acagtgatta aaggagcagg atgaaaagat 120
 ggcacagtca gtgctggtac cgccaggacc tgacagcttc cgcttcttta ccagggaatc 180
 ccttgctgct attgaacaac gcattgcaga agagaaagct aagagacca aacaggaacg 240
 caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttggaag cagsaaaatc 300
 tcttccattt atttatggag acattcctcc agagatgggt tcagtgtccc tggaggatct 360
 ggacccttac tatatcaata agaaagtgag ttcttagtca agttgccttc actgcctatt 420

tactaattgg ttctgggcta gtcccagggg tgatggtgaa gaaggctggc ctccttcct	480
ctgtctaaag tatcactaag atgctggatg ggcctgaccg tgtaatggac caatgatcct	540
agaagtcttt tggaagcact catttgaacc tgcatttgtg agacaggcag agaactggtg	600
aggcatcctc cagcgcggga attaaggaag gacaaaagcc tattcacctt cttgaataca	660
aattatatgc ttaaaccagt gtaaattgac cctgattccc taataatgtt gagaagcaaa	720
aa	722

<210> 39
 <211> 561
 <212> DNA
 <213> Homo sapiens

<400> 39	
cctatggcat tgatcacaaa ttttcttaat aatcctcatg tcatttatca aatttaggaa	60
agtttatagt gctcagaaaa aaaaagcatc tatcttcatg tcatatgatg gtaattatta	120
tgttatacac tattttacag ggcaatattt ataaataatg gttttacttt tctcttaaaa	180
tattcttaat atatattcta agttttgttt tatgtgttgt gttttctttt tcagacgttt	240
atagtattga ataaagggaa agcaatctct cgattcagtg ccaccctgc cttttacatt	300
ttaactccct tcaaccctat tagaaaatta gctattaaga ttttggtaaca ttcatacct	360
ttttcaaadc gtcacttaat atgattttct tctttgacca agttattgag ctacacattt	420
tccaaaatat ctgtgggttg caatgttatg tgttctttct ttttctttcc ttttactcaa	480
tcgttagcat gttgcaaaat gagatcacag gtaagtgaat tactttcccc cgtcttctaa	540
gtgtttcttc tctacccaac t	561

<210> 40
 <211> 510
 <212> DNA
 <213> Homo sapiens

<400> 40	
acctaaatag cctcaaaata gttgatggct tggcctgaag acaagatcta aatatgaggt	60
tgctgagtta tagaaatggc aaaaaaagg gtcaataata gaataataag caacaaaata	120
atagtaagca ctaaagtttt aaacttcatg gtggatgaagg catggtagtg cataaaagta	180
agatttttcc attgaacttt gtcttccttg acgatattct actttattca atatgctcat	240
tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac	300

aaagaatgtg gagtaagtat aaatatTTTT caatatTgac ctccctttat gtttcatatt	360
gtgcttttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta	420
accagaccct gattcaaatt catttctgtc actaaatgtc ttctaggaca aagcttgtag	480
tgggctcact tagttgtgta aattactgca	510

<210> 41
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (293)..(293)
 <223> n= a, c, t or g

<400> 41	
taagatatgt acttgtaaata taaccactag atttttaatg tgagcttggc tattgtctct	60
caggtatacc ttacaggaa ttatacttt tgaatcactt attaaaatac ttgcaagggg	120
cttttgttta gaagatttca cattttttacg ggatccatgg aattggttgg atttcacagt	180
cattactttt gcgtaagtat cttaatacat tttctatcct ggaagagtaa atcactgggtg	240
ggagcctata ctatatTTTt cttgggtggct tgccttgaca gaccaagcat ttntcttagt	300
aatcatagtt ttcttccaat caaattatcc agtttggaga aattaggaac tatcatagta	360
aattacatgg	370

<210> 42
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (133)..(133)
 <223> n = a, c, t or g

<400> 42	
caattagcac tgtaaagtaa taaagtttcc caaataacag agattatgat tgatgacaat	60
gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaaggtcttg	120
atgaaagacc aangaagacg tagattttccc taaattctga ataactctga tttaattcta	180
caggtatgta acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt	240
cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataaggtgg	300

taggccccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaaccc	360
cctattacag	370

<210> 43
 <211> 410
 <212> DNA
 <213> Homo sapiens

<400> 43	
gtaagaagaa aatgggtataa ggtggtaggc cccttatatc tccaactgtt tcttgtgttc	60
tgtcattgtg tttgtgtgtg aaccccctat tacagatatg tgacagagtt tgtggacctg	120
ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc	180
attccagggtg agagctaggt taaacaccga ggctgacttt agctacagtg gtgctacaat	240
cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa	300
gcaagaattg gtacatcatt ttttgatgg atttgattct ttgcttttta cccgttgctt	360
tctttaaaac tattctaaat cagcctttga gtttaacaag tgttgcatga	410

<210> 44
 <211> 1066
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (229)..(229)
 <223> n = a, c, t or g

<400> 44	
aaagagtgtt tggaaataca catttggttc atttccattc acagttttct aatgaacata	60
caagttctgc tttcattcat tttcaccagc tagtaggctt ttcattgaaa tgttattcaa	120
tcacaaacat taaactaata ttgttggcat tctgcatgac atttttatatt tccaggccaa	180
gctcatgata tttttgccgg taaaatagct gttgagtagt atatttaant tcccccttct	240
gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct	300
ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgcgctaa taggattgca	360
gttgttcatg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt	420
tgaaataaat atcacttcct tctttaacaa ttcattggat gggaatggta ctactttcaa	480
taggacagtg agcatattta actgggatga atatattgag gataaaaagta agatatactc	540

tataaaccat taagttggtt agttctctaa atattaaata ttatatataa tggaaattat	600
ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa	660
agagatatca aaggatacct tattctattt ttsttatctg tccattgata tagtaaaagt	720
tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata	780
ttaaaaaagg tttatttggt agacattaat caggtttttc agtcatttta ataaataagt	840
cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa	900
taatttggcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa	960
ctagagaaac catttatcaa gatgaaataa gaatttgtgt gctcctcaga aggttaagta	1020
accctgattt agccattcac ttcattccata ttctaattag tccctt	1066

<210> 45
 <211> 385
 <212> DNA
 <213> Homo sapiens

<400> 45	
gttcaattat tgtgaaaaat cttcttttagc catatatatt tattagttta tccatctcat	60
tatgattgaa aacatttgtg agctttgccca cctaaacagg gtggctgaag tgttttacag	120
gatttttaatg attcttttcta ttccttttctc tttaaataagg tcacttttat tttttacagg	180
ggcaaaatga tgctctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttcct	240
actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccactcatcc	300
agtcccacca ctctcactc aaaaccctcc ataaattcta cttcacggtg actctcagaa	360
tgaccaggat aagtgtagat tctca	385

<210> 46
 <211> 430
 <212> DNA
 <213> Homo sapiens

<400> 46	
tataataatg acaattatga atcacagagg aatccacaaa gtagacctta tagattctgt	60
cattatataa atcagtccac ttagtgctga gttaagtact gggtaagggtg agagaaatcg	120
gcttttttct agtgccctgta taaaacagac attggcatat attaaaacag gaaaaccaat	180
tagcagactt gccgttattg actycctctc tttcctctaa cctaattaca gccagtgtcc	240
tgaaggatac atctgtgtga aggctggtag aaaccccaac tatggctaca cgagctttga	300
cacctttagt tgggcctttt tgtccttatt tcgtctcatg actcaagact tctgggaaaa	360

cctttatcaa ctggtgagaa cagataaaat catttttctg agaatcataa aacaccgaac 420
tcaagagaat 430

<210> 47
<211> 646
<212> DNA
<213> Homo sapiens

<400> 47
tgctgtagaa tattttatta cttagagtgt aagtttgtaa catcctatat aaaatttatt 60
aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt 120
ttgtgctggg cattttcttg ggctcattct atctaataaa tttgatcttg gctgtgggtgg 180
ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg 240
aatttcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagttaa 300
caagcatacg gtcctttgtt tttctgtatc taaattcttt aacctaaatg ttgaggtcag 360
tggcaaggta gttgacatta gaaataggtc atatgtgttt ggtaagtgtc aggagcctgt 420
ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa 480
tggcatcaaa aaatggataa ttataattgc tttactgaca tttttttctc cttgtgact 540
ccttgaggaa attaatgatt aacaaaggcc tcatgtactc aaacttgcag agtagataaa 600
cctacatgtc ctcaagtgaa gtattttctt aggggaagag gaattc 646

<210> 48
<211> 711
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (164)..(164)
<223> n = a, c, t or g

<400> 48
tatgtatcat cttccatatg aatgcgcatt ttactctttg attgggtctaa taacagtgtg 60
ctgtgttcta aaacacagaa taaaatggag aattgttttt caagattatc ttcatgatat 120
tgaagctcaa ttaagcagta acatgataat tattttttta gatnatatgc aacttcccac 180
atactttgcg cccttctagg cggcagctgc agccgcattc gctgaatcaa gagacttcag 240
tgggtgctggg gggataggag ttttttcaga gagttcttca gtagcatcta agttgagctc 300

caaaagtgaa aaagagctga aaaacagaag aaagaaaaag aaacagaaaag aacagtctgg	360
agaagaagag aaaaatgaca gagtcctaaa atcggaatct gaagacagca taagaagaaa	420
aggtttccgt ttttccttgg aaggaagtag gctgacatat gaaaagagat tttcttctcc	480
acaccaggta aaaatattaa attacatgaa ttgtgttctc ataaattttt taaaagaata	540
tgccagaatt taatggagag aaaaccgcct tccacctgga tggcacaatg ctttcagagt	600
agtgatgatt atcaagtgtt ttggctatca cttcagagaa tttgtgagtt ttgcaacttt	660
ttggaatccc aggaaggaaa ttttagatcc ctctgggttt ggaaaaattt g	711

<210> 49

<211> 1026

<212> DNA

<213> Homo sapiens

<400> 49

ttatggggac acttctgact atgttgaggt gtgggtaaag taggagaaaa gagagcagaa	60
gatggaaaat ggaggaagga gaaaaagcga gagtgaaata gaaaaggatga accttgtaga	120
aagtgccaaa atgccaccag cagtcatcag aggggtgctt tcttccacat gtccaatgac	180
ttatccttga gtaagtcaat gactatgaca caatgaatca aattctgttt ttcagaatgc	240
cagctcttaa ctctcttcat ctcatTTTTTg tttcttttct tgttattcat agtccttact	300
gagcatccgt ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt	360
cagaggtcga gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac	420
ctttgaggac aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg	480
gcgccacagc aatgtcagcc aggccagccg tgcctccagg gtgctcccca tctgccccat	540
gaatgggaag atgcatagcg ctgtggactg caatgggtgtg gtctccctgg tcgggggccc	600
ttctaccctc acatctgctg ggcagctcct accagagggtg aggccaaacy magattgcag	660
ctgatgtgaa gagagtgtg actggtgcag gcaggagtgy ttttccattt mcacatctaa	720
gaatttkttg agtttsttgc ccaaaggctg ggagtttgtt caatcaagct gttaactgtc	780
ttgtgaaact sttctattca gacttitycta caaagtaatt aaaaacctag gttggctgtc	840
agagaatata attagamgtm atctttcatc ayyattacta tggtatgaaa ctgcacaaaa	900
agcaaagcaa caatttatca agcataatgt tygaytaata tagttaaatt aaatccaagg	960
aaattaatgc tcacaaatta aataaatact taaggatttt gtgattgttg ttcatttaaa	1020
aggaga	1026

<210> 50
 <211> 601
 <212> DNA
 <213> Homo sapiens

<400> 50
 ataggaaagc ccaccttgac aaaccaggg ctccccaaaa gctgaaaatc tgacagactt 60
 taaacaaccc ccaaataatt atcattccaa caatatctta gtgagctttt tacatctgag 120
 aaagcatggg gtatatcttag ttaaataaca cctgttgtag gaatgctttg ggctttgctg 180
 ctttcaaaaa tagtggttat ttcactctgaa attctacttc tagggcacia ctactgaaac 240
 agaaataaga aagagacggg ccagttctta tcatgtttcc atggatttat tggaagatcc 300
 tacatcaagg caaagagcaa tgagtatagc cagtattttg accaacacca tggaaggat 360
 gttaaaagtc ctgcgtcaca gttacttggg gctttcctaa tgatgaaaaa cacttcataa 420
 atttcaataa aatacttcct gacttgatat tgtatcatta ttacacattt tactaaataa 480
 cagtaaaatc cgtgcataac tcatggattc atatattcca cagatttttt tttttatat 540
 ttagcctgta gaaagctgct gcaaagttaa ggtatatttg aacaccactt tcataactta 600
 a 601

<210> 51
 <211> 645
 <212> DNA
 <213> Homo sapiens

<400> 51
 gcttactagc ctttctgtac tgatcctttc tatgacagca aaccattgt aaaattttcc 60
 ctgttctctc agcagattaa ccataatat cttttaacaa ctttagattt tttaaattcc 120
 ttttaattta aaccaaactc gcttaataga aagtaagcag ttttcatgag gattctaact 180
 ttttttcttc cagaacttga agaattcaga cagaaatgcc caccatgctg gtataaattt 240
 gctaatatgt gtttgatttg ggactgttgt aaaccatggg taaagggtgaa acaccttgct 300
 aacctggttg taatggaccc atttgttgac ctggccatca ccactctgcat tgtcttaaat 360
 acactcttca tggctatgga gcactatccc atgacggagc agttcagcag tgtactgtct 420
 gttggaaacc tggtaagcct cactgagagt ttctcttctt cttgaaagag ttataattg 480
 ccttagtgaa ttttacatat tgctctcaaa ttaaatatca actaattggc catgtatatc 540
 ttgacatcaa atgttttagca tcccttttaa ataacaaaaa aatgttgcta ccatagtgca 600
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<210> 52
<211> 485
<212> DNA
<213> Homo sapiens

<400> 52
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atttaggtct tcacagggat cttcacagca gaaatgtttc tcaagataat tgccatggat 180
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gtaaattaac tgggagtgtt cataaaatgt actttrtaat taattagtct tcattctcat 360
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ttggattgcc ataccaccaa atggtagttt cttcttcac atagctttaa taaagttcac 480
ttaaa 485

<210> 53
<211> 602
<212> DNA
<213> Homo sapiens

<400> 53
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ta 602

<210> 54

<211> 803
<212> DNA
<213> Homo sapiens

<400> 54
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tcatgaatta gcagaaatgc atgttagaat aaaataaggt gtcaagaaca atcttagaaa 180
actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttctgtctgt 240
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tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca 360
gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaag cttttgttag 420
gaagcagaaa gcttttagatg aaattaaacc gcttgaagat ctaaataata aaaaagacag 480
ctgtatttcc aaccatacca ccatagaaat aggcaaagac ctcaattatc tcaaagacgg 540
aatggaact actagtggca taggcagcag tgtagaaaaa tatgtcgtgg atgaaagtga 600
ttacatgtca tttataaaca accctagcct cactgtgaca gtaccaattg ctgttggaga 660
atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaaag 720
caaagaggta aaatgttaaa taaggagata ttttgggtga tataatctgt gttaaatact 780
aggtgtttta tgcgtgtctc tgt 803

<210> 55
<211> 615
<212> DNA
<213> Homo sapiens

<220>
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<222> (90)..(90)
<223> n = a, c, t or g

<220>
<221> misc_feature
<222> (378)..(386)
<223> n = a, c, t or g

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tggcattatg tttaagttct taattacaga tcaagaaaaa tgcatacaga agatgggggg 180

gggcacacct aattaatttt tatatttaga ttaaagaaaa taattaaatg tgtttttttg	240
tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat	300
tggagctccc gccgaggag aacagcctga ggttgaacct gaggaatccc ttgaacctga	360
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acgtttttaa ggcaa	615

<210> 56
 <211> 400
 <212> DNA
 <213> Homo sapiens

<400> 56	
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gtcttcattt ttttcccaca tatttttagac tgtgtacgga agttcaagtg ttgtcagata	180
agcatagaag aaggcaaagg gaaactctgg tggaatttga ggaaaacatg ctataagata	240
gtggagcaca attgggtcga aaccttcatt gtcttcatga ttctgctgag cagtggggct	300
ctggtaggtg atgcatgatc cactccttca cctttcatct gaaatctttt ccctttccct	360
tcaatcaact catattaccc acttttaaata taagggtgtt	400

<210> 57
 <211> 560
 <212> DNA
 <213> Homo sapiens

<400> 57	
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agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatcataa	180
aatttaatat aatttttttg cttacaggcc tttgaagata tatacattga gcagcgaaaa	240
accattaaga ccatgttaga atatgctgac aaggttttca cttacatatt cattctggaa	300
atgctgctaa agtgggttgc atatggtttt caagtgtatt ttaccaatgc ctgggtgctgg	360
ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata	420

tatgtaatag ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca 480
 gcccaaatat aaattatggt tctcatttca cagtgaagagg atgcctcaaa acatttttta 540
 ccaatttaaa tacatatata 560

<210> 58
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 58
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 gcaaggctga actgtgtaga cttttttata tgtaaataag aaaattgtgt tgctttttct 180
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 ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg 360
 acactttgta ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact 420
 gacatagcta atcaatcaaa aataatattt accagatgcc cataatactt ggcactgctg 480

<210> 59
 <211> 640
 <212> DNA
 <213> Homo sapiens

<400> 59
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 tttgttggtg gcttttctact ttttttctt tctcatctg tgccagggtg ttgtaaattgc 180
 tcttttagga gccattccat ctatcatgaa tgtacttctg gtttgtctga tcttttggct 240
 aatattcagt atcatgggag tgaatctctt tgctggcaag ttttaccatt gtattaatta 300
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 cattgagagc aatcaaactg ccagggtgaa aaatgtgaaa gttaaactttg ataacgtagg 420
 acttggatat ctgtctctac ttcaagtagt aagtaatcac tttattattt tccatgatgt 480
 gtaattaaaa tgagtctaaa gtttttcttc ctcataatga gatatccacc tgttagaatg 540
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cttgtagcatt gttggcaggg atgtaaatta gtatagcttt 640

<210> 60
<211> 480
<212> DNA
<213> Homo sapiens

<400> 60
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<210> 61
<211> 366
<212> DNA
<213> Homo sapiens

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cctgtacatg tatctttatt ttgtcatctt tattatTTTTT gggtcattct ttaccttgaa 180
tcttttcatt ggtgtcatca tagataactt caaccaacag aaaaagaaga taagtatatt 240
aaaacttcat ccttgctctg aaatatgaac taaatatttc atactctttc ctttagcctc 300
caaatgcaa tcacaaaaa aagaatataa aattcagaaa ttattttgag acatttgata 360
atcgat 366

<210> 62
<211> 560
<212> DNA
<213> Homo sapiens

<400> 62
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attagtaaca atagaatgaa atgtgggagc caattttcac atgattacta aggtggattt	180
tatagccagc aaagaacaca attttaacaa gtgttgcttt catttcttta ctttggaggt	240
caagacattt ttatgacaga agaacagaag aaatactaca atgcaatgaa aaaactgggt	300
tcaaagaaac cacaaaaacc catacctcga cctgctgtaa gaataacata ttttcattgc	360
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tgtggatttg taacacaaag ttttttacct taacaatggg actagctagc ctaaatagct	480
tgaaaaatgt actttacata tataatatgt ataaattata taatgcataa catattttat	540
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<210> 63
 <211> 650
 <212> DNA
 <213> Homo sapiens

<400> 63	
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gtttctaattg gaacttttac atattatttg ttccagaaca aattccaagg aatgggtcttt	180
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attgtaggta agaagagggt cttttattca gttaaggaat atagtggtaa aaatatgtgt	480
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aaatctaata gtccattggt ttagttagt tttgccattt ctctaattgc atgctgtgct	600
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<210> 64
 <211> 3700
 <212> DNA
 <213> Homo sapiens

<400> 64	
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 <211> 9112
 <212> DNA
 <213> Homo sapiens

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gtgttttggg	tgagagtggg	gagatggatg	cccttcgaat	acagatggaa	gacaggttta	6120
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aagaggaggt	gtctgccgct	atcattcagc	gtaatttcag	atgttatctt	ttaaagcaaa	6240
ggttaaaaaa	tatatcaagt	aactataaca	aagaggcaat	aaaggggagg	attgacttac	6300
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atgggagttc	ctctaccacc	tctctctctt	cctatgatag	tgtaacaaaa	ccagacaagg	6420
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catattttta	caaaatttgt	tctagtgcac	ttccatggtc	cccaattcat	agttttattca	6900
taatgctatg	tcactatttt	tgtaaatgag	gtttacgttg	aagaaacagt	atacaagaac	6960
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<212> PRT
<213> Homo sapiens

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<223> Xaa = any amino acid

<400> 67

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
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Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
275 280 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305 310 315 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
325 330 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
370 375 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
385 390 395 400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
405 410 415

Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
420 425 430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
450 455 460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
465 470 475 480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
485 490 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
500 505 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
515 520 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
530 535 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
565 570 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
610 615 620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr

625		630		635		640
Gln Ile Ser Met	Glu Met Leu Glu Asp	Ser Ser Gly Arg	Gln Arg Ala			
	645	650	655			
Val Ser Ile Ala	Ser Ile Leu Thr	Asn Thr Met	Glu Glu Leu Glu Glu			
	660	665	670			
Ser Arg Gln Lys	Cys Pro Pro Cys	Trp Tyr Arg	Phe Ala Asn Val Phe			
	675	680	685			
Leu Ile Trp Asp	Cys Cys Asp	Ala Trp Leu Lys	Val Lys His Leu Val			
	690	695	700			
Asn Leu Ile Val	Met Asp Pro Phe	Val Asp Leu Ala	Ile Thr Ile Cys			
	705	710	715	720		
Ile Val Leu Asn	Thr Leu Phe Met	Ala Met Glu His	Tyr Pro Met Thr			
	725	730	735			
Glu Gln Phe Ser	Ser Val Leu Thr	Val Gly Asn Leu	Val Phe Thr Gly			
	740	745	750			
Ile Phe Thr Ala	Glu Met Val Leu	Lys Ile Ile Ala	Met Asp Pro Tyr			
	755	760	765			
Tyr Tyr Phe Gln	Glu Gly Trp Asn	Ile Phe Asp Gly	Ile Ile Val Ser			
	770	775	780			
Leu Ser Leu Met	Glu Leu Gly Leu	Ser Asn Val Glu	Gly Leu Ser Val			
	785	790	795	800		
Leu Arg Ser Phe	Arg Leu Leu Arg	Val Phe Lys Leu	Ala Lys Ser Trp			
	805	810	815			
Pro Thr Leu Asn	Met Leu Ile Lys	Ile Ile Gly Asn	Ser Val Gly Ala			
	820	825	830			
Leu Gly Asn Leu	Thr Leu Val Leu	Ala Ile Ile Val	Phe Ile Phe Ala			
	835	840	845			
Val Val Gly Met	Gln Leu Phe Gly	Lys Ser Tyr Lys	Glu Cys Val Cys			
	850	855	860			

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
900 905 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
915 920 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
930 935 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
980 985 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser
1010 1015 1020

Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu
1025 1030 1035

Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
1040 1045 1050

Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr
1055 1060 1065

Glu Glu Phe Ser Ser Glu Ser Glu Leu Glu Glu Ser Lys Glu Lys
1070 1075 1080

Leu Asn	Ala Thr Ser Ser Ser	Glu Gly Ser Thr Val	Asp Val Val
1085		1090	1095
Leu Pro	Arg Glu Gly Glu Gln	Ala Glu Thr Glu Pro	Glu Glu Asp
1100		1105	1110
Leu Lys	Pro Glu Ala Cys Phe	Thr Glu Gly Cys Ile	Lys Lys Phe
1115		1120	1125
Pro Phe	Cys Gln Val Ser Thr	Glu Glu Gly Lys Gly	Lys Ile Trp
1130		1135	1140
Trp Asn	Leu Arg Lys Thr Cys	Tyr Ser Ile Val Glu	His Asn Trp
1145		1150	1155
Phe Glu	Thr Phe Ile Val Phe	Met Ile Leu Leu Ser	Ser Gly Ala
1160		1165	1170
Leu Ala	Phe Glu Asp Ile Tyr	Ile Glu Gln Arg Lys	Thr Ile Lys
1175		1180	1185
Thr Met	Leu Glu Tyr Ala Asp	Lys Val Phe Thr Tyr	Ile Phe Ile
1190		1195	1200
Leu Glu	Met Leu Leu Lys Trp	Val Ala Tyr Gly Phe	Gln Thr Tyr
1205		1210	1215
Phe Thr	Asn Ala Trp Cys Trp	Leu Asp Phe Leu Ile	Val Asp Val
1220		1225	1230
Ser Leu	Val Ser Leu Val Ala	Asn Ala Leu Gly Tyr	Ser Glu Leu
1235		1240	1245
Gly Ala	Ile Lys Ser Leu Arg	Thr Leu Arg Ala Leu	Arg Pro Leu
1250		1255	1260
Arg Ala	Leu Ser Arg Phe Glu	Gly Met Arg Val Val	Val Asn Ala
1265		1270	1275
Leu Val	Gly Ala Ile Pro Ser	Ile Met Asn Val Leu	Leu Val Cys
1280		1285	1290

Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe
1295 1300 1305

Ala Gly Lys Phe Tyr His Cys Val Asn Met Thr Thr Gly Asn Met
1310 1315 1320

Phe Asp Ile Ser Asp Val Asn Asn Leu Ser Asp Cys Gln Ala Leu
1325 1330 1335

Gly Lys Gln Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn
1340 1345 1350

Val Gly Ala Gly Tyr Leu Ala Leu Leu Gln Val Ala Thr Phe Lys
1355 1360 1365

Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asp Val
1370 1375 1380

Lys Leu Gln Pro Val Tyr Glu Glu Asn Leu Tyr Met Tyr Leu Tyr
1385 1390 1395

Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu
1400 1405 1410

Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys
1415 1420 1425

Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln Lys Lys Tyr
1430 1435 1440

Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln Lys Pro
1445 1450 1455

Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp Phe
1460 1465 1470

Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
1475 1480 1485

Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys
1490 1495 1500

Tyr Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val

1505		1510		1515
Leu Phe Thr Gly Glu Phe Val	Leu Lys Leu Val Ser	Leu Arg His		
1520	1525	1530		
Tyr Tyr Phe Thr Ile Gly Trp	Asn Ile Phe Asp Phe	Val Val Val		
1535	1540	1545		
Ile Leu Ser Ile Val Gly Met	Phe Leu Ala Glu Met	Ile Glu Lys		
1550	1555	1560		
Tyr Phe Val Ser Pro Thr Leu	Phe Arg Val Ile Arg	Leu Ala Arg		
1565	1570	1575		
Ile Gly Arg Ile Leu Arg Leu	Ile Lys Gly Ala Lys	Gly Ile Arg		
1580	1585	1590		
Thr Leu Leu Phe Ala Leu Met	Met Ser Leu Pro Ala	Leu Phe Asn		
1595	1600	1605		
Ile Gly Leu Leu Leu Phe Leu	Val Met Phe Ile Tyr	Ala Ile Phe		
1610	1615	1620		
Gly Met Ser Asn Phe Ala Tyr	Val Lys Lys Glu Ala	Gly Ile Asp		
1625	1630	1635		
Asp Met Phe Asn Phe Glu Thr	Phe Gly Asn Ser Met	Ile Cys Leu		
1640	1645	1650		
Phe Gln Ile Thr Thr Ser Ala	Gly Trp Asp Gly Leu	Leu Ala Pro		
1655	1660	1665		
Ile Leu Asn Ser Ala Pro Pro	Asp Cys Asp Pro Asp	Thr Ile His		
1670	1675	1680		
Pro Gly Ser Ser Val Lys Gly	Asp Cys Gly Asn Pro	Ser Val Gly		
1685	1690	1695		
Ile Phe Phe Phe Val Ser Tyr	Ile Ile Ile Ser Phe	Leu Val Val		
1700	1705	1710		
Val Asn Ser Tyr Ile Ala Val	Ile Leu Glu Asn Phe	Ser Val Ala		
1715	1720	1725		

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met
1730 1735 1740

Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe
1745 1750 1755

Ile Glu Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro
1760 1765 1770

Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met
1775 1780 1785

Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile
1790 1795 1800

Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
1805 1810 1815

Asp Ala Leu Arg Ile Gln Met Glu Asp Arg Phe Met Ala Ser Asn
1820 1825 1830

Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg
1835 1840 1845

Lys Gln Glu Glu Val Ser Ala Ala Ile Ile Gln Arg Asn Phe Arg
1850 1855 1860

Cys Tyr Leu Leu Lys Gln Arg Leu Lys Asn Ile Ser Ser Asn Tyr
1865 1870 1875

Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp Leu Pro Ile Lys Gln
1880 1885 1890

Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser Thr Pro Glu Lys
1895 1900 1905

Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser Tyr Asp Ser
1910 1915 1920

Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys Pro Glu
1925 1930 1935

Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
 1940 1945 1950

<210> 68
 <211> 1951
 <212> PRT
 <213> Homo sapiens

<220>
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 <222> (122)..(122)
 <223> Xaa = any amino acid

<400> 68

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
 20 25 30

Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
 85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
 100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
 130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
275 280 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305 310 315 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
325 330 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
370 375 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
385 390 395 400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
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Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
420 425 430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
450 455 460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
465 470 475 480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
485 490 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
500 505 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
515 520 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
530 535 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
565 570 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn

610				615				620							
Gly 625	Thr	Thr	Thr	Glu	Thr 630	Glu	Val	Arg	Lys	Arg 635	Arg	Leu	Ser	Ser	Tyr 640
Gln	Ile	Ser	Met	Glu 645	Met	Leu	Glu	Asp	Ser 650	Ser	Gly	Arg	Gln	Arg 655	Ala
Val	Ser	Ile	Ala 660	Ser	Ile	Leu	Thr	Asn 665	Thr	Met	Glu	Glu	Leu 670	Glu	Glu
Ser	Arg	Gln 675	Lys	Cys	Pro	Pro	Cys 680	Trp	Tyr	Arg	Phe	Ala 685	Asn	Val	Phe
Leu 690	Ile	Trp	Asp	Cys	Cys	Asp 695	Ala	Trp	Leu	Lys	Val 700	Lys	His	Leu	Val
Asn 705	Leu	Ile	Val	Met	Asp 710	Pro	Phe	Val	Asp	Leu 715	Ala	Ile	Thr	Ile	Cys 720
Ile	Val	Leu	Asn 725	Thr	Leu	Phe	Met	Ala	Met 730	Glu	His	Tyr	Pro	Met 735	Thr
Glu	Gln	Phe	Ser 740	Ser	Val	Leu	Thr	Val 745	Gly	Asn	Leu	Val	Phe	Thr	Gly
Ile	Phe	Thr 755	Ala	Glu	Met	Val	Leu 760	Lys	Ile	Ile	Ala 765	Met	Asp	Pro	Tyr
Tyr 770	Tyr	Phe	Gln	Glu	Gly	Trp 775	Asn	Ile	Phe	Asp	Gly 780	Ile	Ile	Val	Ser
Leu 785	Ser	Leu	Met	Glu	Leu 790	Gly	Leu	Ser	Asn	Val 795	Glu	Gly	Leu	Ser	Val
Leu	Arg	Ser	Phe 805	Arg	Leu	Leu	Arg	Val	Phe 810	Lys	Leu	Ala	Lys	Ser 815	Trp
Pro	Thr	Leu	Asn 820	Met	Leu	Ile	Lys	Ile 825	Ile	Gly	Asn	Ser	Val 830	Gly	Ala
Leu	Gly	Asn 835	Leu	Thr	Leu	Val	Leu 840	Ala	Ile	Ile	Val	Phe 845	Ile	Phe	Ala

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
850 855 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
900 905 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
915 920 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
930 935 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
980 985 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser
1010 1015 1020

Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu
1025 1030 1035

Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
1040 1045 1050

Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr
1055 1060 1065

Glu	Glu	Phe	Ser	Ser	Glu	Ser	Glu	Leu	Glu	Glu	Ser	Lys	Glu	Lys
1070						1075					1080			
Leu	Asn	Ala	Thr	Ser	Ser	Ser	Glu	Gly	Ser	Thr	Val	Asp	Val	Val
1085						1090					1095			
Leu	Pro	Arg	Glu	Gly	Glu	Gln	Ala	Glu	Thr	Glu	Pro	Glu	Glu	Asp
1100						1105					1110			
Leu	Lys	Pro	Glu	Ala	Cys	Phe	Thr	Glu	Gly	Cys	Ile	Lys	Lys	Phe
1115						1120					1125			
Pro	Phe	Cys	Gln	Val	Ser	Thr	Glu	Glu	Gly	Lys	Gly	Lys	Ile	Trp
1130						1135					1140			
Trp	Asn	Leu	Arg	Lys	Thr	Cys	Tyr	Ser	Ile	Val	Glu	His	Asn	Trp
1145						1150					1155			
Phe	Glu	Thr	Phe	Ile	Val	Phe	Met	Ile	Leu	Leu	Ser	Ser	Gly	Ala
1160						1165					1170			
Leu	Ala	Phe	Glu	Asp	Ile	Tyr	Ile	Glu	Gln	Arg	Lys	Thr	Ile	Lys
1175						1180					1185			
Thr	Met	Leu	Glu	Tyr	Ala	Asp	Lys	Val	Phe	Thr	Tyr	Ile	Phe	Ile
1190						1195					1200			
Leu	Glu	Met	Leu	Leu	Lys	Trp	Val	Ala	Tyr	Gly	Phe	Gln	Thr	Tyr
1205						1210					1215			
Phe	Thr	Asn	Ala	Trp	Cys	Trp	Leu	Asp	Phe	Leu	Ile	Val	Asp	Val
1220						1225					1230			
Ser	Leu	Val	Ser	Leu	Val	Ala	Asn	Ala	Leu	Gly	Tyr	Ser	Glu	Leu
1235						1240					1245			
Gly	Ala	Ile	Lys	Ser	Leu	Arg	Thr	Leu	Arg	Ala	Leu	Arg	Pro	Leu
1250						1255					1260			
Arg	Ala	Leu	Ser	Arg	Phe	Glu	Gly	Met	Arg	Val	Val	Val	Asn	Ala
1265						1270					1275			

Leu	Val	Gly	Ala	Ile	Pro	Ser	Ile	Met	Asn	Val	Leu	Leu	Val	Cys
1280						1285					1290			
Leu	Ile	Phe	Trp	Leu	Ile	Phe	Ser	Ile	Met	Gly	Val	Asn	Leu	Phe
1295						1300					1305			
Ala	Gly	Lys	Phe	Tyr	His	Cys	Val	Asn	Met	Thr	Thr	Gly	Asn	Met
1310						1315					1320			
Phe	Asp	Ile	Ser	Asp	Val	Asn	Asn	Leu	Ser	Asp	Cys	Gln	Ala	Leu
1325						1330					1335			
Gly	Lys	Gln	Ala	Arg	Trp	Lys	Asn	Val	Lys	Val	Asn	Phe	Asp	Asn
1340						1345					1350			
Val	Gly	Ala	Gly	Tyr	Leu	Ala	Leu	Leu	Gln	Val	Ala	Thr	Phe	Lys
1355						1360					1365			
Gly	Trp	Met	Asp	Ile	Met	Tyr	Ala	Ala	Val	Asp	Ser	Arg	Asp	Val
1370						1375					1380			
Lys	Leu	Gln	Pro	Val	Tyr	Glu	Glu	Asn	Leu	Tyr	Met	Tyr	Leu	Tyr
1385						1390					1395			
Phe	Val	Ile	Phe	Ile	Ile	Phe	Gly	Ser	Phe	Phe	Thr	Leu	Asn	Leu
1400						1405					1410			
Phe	Ile	Gly	Val	Ile	Ile	Asp	Asn	Phe	Asn	Gln	Gln	Lys	Lys	Lys
1415						1420					1425			
Phe	Gly	Gly	Gln	Asp	Ile	Phe	Met	Thr	Glu	Glu	Gln	Lys	Lys	Tyr
1430						1435					1440			
Tyr	Asn	Ala	Met	Lys	Lys	Leu	Gly	Ser	Lys	Lys	Pro	Gln	Lys	Pro
1445						1450					1455			
Ile	Pro	Arg	Pro	Ala	Asn	Lys	Phe	Gln	Gly	Met	Val	Phe	Asp	Phe
1460						1465					1470			
Val	Thr	Arg	Gln	Val	Phe	Asp	Ile	Ser	Ile	Met	Ile	Leu	Ile	Cys
1475						1480					1485			
Leu	Asn	Met	Val	Thr	Met	Met	Val	Glu	Thr	Asp	Asp	Gln	Gly	Lys

1490		1495		1500
Tyr Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val				
1505		1510		1515
Leu Phe Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His				
1520		1525		1530
Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val				
1535		1540		1545
Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys				
1550		1555		1560
Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg				
1565		1570		1575
Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg				
1580		1585		1590
Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn				
1595		1600		1605
Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe				
1610		1615		1620
Gly Met Ser Asn Phe Ala Tyr Val Lys Lys Glu Ala Gly Ile Asp				
1625		1630		1635
Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu				
1640		1645		1650
Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro				
1655		1660		1665
Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp Thr Ile His				
1670		1675		1680
Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser Val Gly				
1685		1690		1695
Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val Val				
1700		1705		1710

Val	Asn	Ser	Tyr	Ile	Ala	Val	Ile	Leu	Glu	Asn	Phe	Ser	Val	Ala
1715						1720					1725			
Thr	Glu	Glu	Ser	Ala	Glu	Pro	Leu	Ser	Glu	Asp	Asp	Phe	Glu	Met
1730						1735					1740			
Phe	Tyr	Glu	Val	Trp	Glu	Lys	Phe	Asp	Pro	Asp	Ala	Thr	Gln	Phe
1745						1750					1755			
Ile	Glu	Phe	Ser	Lys	Leu	Ser	Asp	Phe	Ala	Ala	Ala	Leu	Asp	Pro
1760						1765					1770			
Pro	Leu	Leu	Ile	Ala	Lys	Pro	Asn	Lys	Val	Gln	Leu	Ile	Ala	Met
1775						1780					1785			
Asp	Leu	Pro	Met	Val	Ser	Gly	Asp	Arg	Ile	His	Cys	Leu	Asp	Ile
1790						1795					1800			
Leu	Phe	Ala	Phe	Thr	Lys	Arg	Val	Leu	Gly	Glu	Ser	Gly	Glu	Met
1805						1810					1815			
Asp	Ala	Leu	Arg	Ile	Gln	Met	Glu	Asp	Arg	Phe	Met	Ala	Ser	Asn
1820						1825					1830			
Pro	Ser	Lys	Val	Ser	Tyr	Glu	Pro	Ile	Thr	Thr	Thr	Leu	Lys	Arg
1835						1840					1845			
Lys	Gln	Glu	Glu	Val	Ser	Ala	Ala	Ile	Ile	Gln	Arg	Asn	Phe	Arg
1850						1855					1860			
Cys	Tyr	Leu	Leu	Lys	Gln	Arg	Leu	Lys	Asn	Ile	Ser	Ser	Asn	Tyr
1865						1870					1875			
Asn	Lys	Glu	Ala	Ile	Lys	Gly	Arg	Ile	Asp	Leu	Pro	Ile	Lys	Gln
1880						1885					1890			
Asp	Met	Ile	Ile	Asp	Lys	Leu	Asn	Gly	Asn	Ser	Thr	Pro	Glu	Lys
1895						1900					1905			
Thr	Asp	Gly	Ser	Ser	Ser	Thr	Thr	Ser	Pro	Pro	Ser	Tyr	Asp	Ser
1910						1915					1920			

Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys Pro Glu
 1925 1930 1935

Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
 1940 1945 1950

<210> 69
 <211> 1380
 <212> DNA
 <213> Homo sapiens

<400> 69
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 gatggattat ttttattttc tttatgtatt gtgtgcttca atatcctaataa aaataatatt 180
 agctaggttc actgatgtat agaatctttt tctacattta gatatttctt gcaaagtgtt 240
 taccagaaag caacacaaaa atactatcag tgagtatgtg tttacactgt tctctaagga 300
 gtcaaattcc tcaccttgaa aataattcat cccaggaaga gaaaagggtt tcaaaagact 360
 agagcaggcc acaaggggagc tttcgcaaaa ctctacacgt aaagggtaat gtaaacctaa 420
 aacctatttt tcaaacagta atttatatat cttttaattt tagtagttta tgtgtgaaac 480
 aatcatgcaa aacaacaaag tgataaaatt ttttaaaaaa attagtgaga tgcaaataac 540
 tgaatatgta aaagggtctca tacatatatta tatgtagtag ataagttaca tttttttagt 600
 gtgttgggaa attttagctc acatcacctc tctactgtca tcttggggca ctttcatgac 660
 taccatgct tcatgcaggt ttactttcct ccctgtgaca gaggataatg ggaatgtttt 720
 ttctttggct caattttgtg tgtgtccgcc agtagatggc gtaccacttt gagtgcgac 780
 ggcccttttt tctttctttt tttttttcct caaagctggt ttctgatata tgttgggtac 840
 catagagtga atctcagaac aggaagcgga ggcataagca gagaggattc tggaaaggtc 900
 tctttgtttt cttatccaca gagaaagaaa gaaaaaaaaa tgtaactaat ttgtaaacct 960
 ctgtggtcaa aaaaaaaaaa aaaaaaaaaa gctgaacagc tgcagaggaa gacacgttat 1020
 accctaacca tcttggatgc tgggctttgt tatgctgtaa ttcataaggc tctgttttat 1080
 caggtaagct gacaaaacat ttcattatct gcaccataga acctagctac caggtcattt 1140
 tccttacttt aaaatcatct tcatgctgct atttttaacc cagtgttggt taaatgtaaa 1200
 ttacaggaac caaaggcatc gtttgatgtg taaactgctt actatttctt tatctttcaa 1260

agaaaataga gcctgtctgg aaatggtgat ttatggtaca tactaggcat caatggtctt	1320
gtgtttttgt agatgcttat gattaattgt attcagaaaa aatatttttt attatactta	1380

<210> 70
 <211> 840
 <212> DNA
 <213> Homo sapiens

<400> 70	
aggggaagaac agaaggatgc tcaggagtgc cagcatgcct tcagaaagac taaatggatc	60
aaggctgcca aagaaggggg agcacccttg tcccaaccct aggatcctgg cagtggttcc	120
tggtcccat cttcctaaat catgctaggg catgctttta acaaggggtca aatatcttgc	180
tttgcacat ccttgctttc tcgatccagg gccataaaaa aaaaaggaat aaaaccaga	240
cacagagcca gagcaccct atgccaaatg tcaaagatta taggctaatt tcacctgtat	300
tctctttcta cagagattat ggagcaagaa aactgaagcc aagccacatc aaggtttgac	360
agggatgaga tacctgtcaa ggattcatag tagagtggct tactgggaaa ggagcaaaga	420
atctcttcta gggatattgt aagaataaat gagataattc acagaaggga cctggagctt	480
ttccggaaaa aggtgctgtg actatctaag gtaactaaac aacttctggg tataagtttg	540
tttttggtga aaataaacta aaatctctac tatttaacaa ggacagctgt atcaggacca	600
aaagaaggca gaggggtgtt ttcttccttc ctctaccagt ttgttcttcc aaagaggcaa	660
atacatagc ggagacatag cacagatgac cttagggaaat ggaatgatgc caaaggctgt	720
tgatgtaaga aagagagatt aactcagttt tttttttgtt tttgtttttt tgttgttgtt	780
gttgttgtt tgagacagag tctctctctg tcgcccaggc tggagtgcag tggcatgaac	840

<210> 71
 <211> 780
 <212> DNA
 <213> Homo sapiens

<400> 71	
gatatattaa attttatgta ttttaataaa ttataatgtg catataatca ttaataatat	60
atatattcca caccaaggca tcagtaagaa ttaattttta aagtctgctc taatgtgaat	120
ataaaattat gtaagaactc tgtataataa gctcacagag tacaagaaag gagaggaaaa	180
aagtaaaaga gaactgcgaa agaactatga gggatttcca aacagcaaaa ttgtcattga	240
agccatgaga aactctactc actaaattct ttaattttctc agcctacca aatattgggc	300
aaaccctaatt tctcttcgag gggaaaagct gagagtctgg aactagccta tcttccgagg	360

acttagagac aacagtatgg gaatttcaac gagacgtttt tactttcttt tgaccaagat	420
tcaaattctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt	480
aaaaagtttt tcatgatttt gtgatggcac cttgttccat atcatctcag ataaatcaga	540
ataatttgtg aaaattactc ggtgatttcc acattagata ttttaaacct aatgttattt	600
ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt	660
agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga	720
ggctgagaca ggtagatga tacaggcata ccattagcag cagactcaat actaaccag	780

<210> 72
 <211> 1025
 <212> DNA
 <213> Homo sapiens

<400> 72	
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ctthactggc attactcttt tgctgaaagt atactatatt ttggcttaca gtgtcaaaac	120
agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaaata	180
taatgtttat atattatata tactgtacat tgtagaatgg ctaaatcaaa ctaattaaca	240
ttaagtacag acttttgata gatttatgaa cttggcttat tgagaatgag gttgaatgat	300
gatgttttca agttcaaagtg ttagtgcag tactaaaagc atgacttaat gtttatagct	360
ttaaaaagtt actaaagaat gacatttttg ttgatgttct tatgcccaat cgcttgcttt	420
cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg	480
taattaaatg tgcaggatga aaagatggca caggcactgt tggtagcccc aggacctgaa	540
agcttccgcc tttttactag agaatctctt gctgctatcg aaaaacgtgc tgcagaagag	600
aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat	660
agtgacttgg aagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg	720
gtgtcagagc ccctggagga cctggatccc tactatatca ataagaaagt gagtattgat	780
tttagacttc taataaatct ttaatgaaac tcttaactgt aatatacttt tctgggcctt	840
atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt	900
atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttggttac	960
agtcaggaaa tatgaataga tgaatgattt ctacaatttc acagtgataa ttcagatagt	1020
caaaa	1025

<210> 73
 <211> 433
 <212> DNA
 <213> Homo sapiens

<400> 73
 tgtaacyata tgттаattta aacatctaac atgtttgtag ttatgatata tcaactgggt 60
 taaacaaacc agtttgaaca aacaaattcy attttttaaa aaggtcctca tgtatgtaag 120
 ctctttaaat aagcccatgt ctaatttagt aattttactc gtattttctg tttcagactt 180
 ttatagtaat gaataaagga aaggcaattt cccgattcag tgccacctct gccttgata 240
 ttttaactcc actaaaccct gttaggaaaa ttgctabsaa gattttggta cattcatatc 300
 cttttaatgt gaattgccta aatgctattt ctaacagttg attttaaaga aaatgtcagt 360
 tatattttca agtatctgta aaatttcttt gagattaatg gtaacattgt tagtttaatt 420
 catttatttg cat 433

<210> 74
 <211> 450
 <212> DNA
 <213> Homo sapiens

<400> 74
 gagtgcacca aggccatatc acaggctttg aagtttctta ttattttatc attgttttaa 60
 aacaaataat attaatttca cagtttttgc atcgataaac ttttttgtgt gttttggatc 120
 atttataaat ggccatggta acctactaac atttattcct taactataat ctactttatt 180
 cagcatgctt atcatgtgca ctattttgac caactgtgta tttatgacct tgagcaaccc 240
 tcctgactgg acaaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac 300
 actcaaattc tctagcaatc tccttggtgg tatagcctga cttatgggtt ccacttctgt 360
 ctaagaaaag ttattttcat aatatgcagc cggttaaggga ggtctttcgg gggagctatt 420
 cttctacgag gtaagtattt tcccacaaaa 450

<210> 75
 <211> 701
 <212> DNA
 <213> Homo sapiens

<400> 75
 aaaatttacc atttgyggct ttccattaca tttctatcag ataactctgc gctagtaggt 60
 caaactagat gattatccat aagatacatg aaactattat tctaaaaccc aaatagttaa 120

accagattag attcctaaag aatatatctt ctcttcagtt taactctttg ctcaggcttg	180
taaaactaac taaatgaata gattatttgg taaatagaag taaggaacaa tatttttaatg	240
aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat tttaacagtt	300
caagcaaaat tgttaatttt ggcttggatg tttttcctag gtacacattc actggaatct	360
atacctttga gtcacttata aaaatcttgg caagagggtt ttgcttagaa gattttacgt	420
ttcttcgtga tccatggaac tggctggatt tcagtgtcat tgtgatggcg tgagtaactt	480
tgaaaatttg ataagcgcaa aggagtgaag atagtcatag tacaacaag gtctttgtgt	540
catatattaa atgtagagct ttcttgtagg tcaagttaac tatatgggtt gtgtattttc	600
agaatacata ttagaataca tattgcaatg taaatatatc cagtaaatga tcaataaatg	660
gggttatctt catgtcatat agtctttctc ttcacaaaa t	701

<210> 76
 <211> 286
 <212> DNA
 <213> Homo sapiens

<400> 76	
atctgttaaa ctcacagggc tctatgtgcc aaaccagca ttaagtcctt atttagtata	60
aactttgcca aaactatcag taactctgat ttaattctgc aggtatgtaa cagaatttgt	120
aagcctaggc aatgtttcag cccttcgaac tttcagagtc ttgagagctc tgaaaactat	180
ttctgtaatc ccaggtaaga agaaactggg gtaaggtagt agggccctta tatctccaac	240
ttttcttggtg tggtattgtg tttgtgtgtg aactccccta ttacag	286

<210> 77
 <211> 515
 <212> DNA
 <213> Homo sapiens

<400> 77	
gtaagaagaa actggtgtaa ggtagtaggc cccttatatc tccaactttt cttgtgtgtt	60
attgtgtttg tgtgtgaact cccctattac agatatgtga cagagtttgt ggacctgggc	120
aatgtctcag cgttgagaac attcagagtt ctccgagcac tgaaaacaat ttcagtcatt	180
ccagggtgaga gctagggtta acaccgaggt tgactttaat tattgagttt gaaatcaatt	240
tatatgactt acagcattag ccttggtgct tattattaca gttcatcccg gtaaataatg	300
ccaaatgatg tttcaatgtc agtttagctc ctaaaatctt ataaattaca tgcgtattta	360

taaagtcagc ctttgagttt aacagaaaat tgcattgagac atcttcaaaa aatgctaatt	420
tgggcctctt gcgctctctc tctctctttt tcactacat ggctttacta acagatttgg	480
attttacat tcgctgcaga ttagttcaa aaatg	515

<210> 78
 <211> 564
 <212> DNA
 <213> Homo sapiens

<400> 78	
aaacttcctg actagatatt taaaccttca tattgaattt ccagcaagca cactgttcat	60
gtgtaaaatc tgctgttcat ctatttccca aatcatcagg ctatccatac agctttggtg	120
tctaaatagt caagcaatca tttatggggg aaagagaatg tgtgtgacta ttaagaaatc	180
atgatttctg gcactcttcc tcaggttaacc tatagttctc tctctgcagg tttaaagacc	240
attgtggggg ccctgatcca gtcggtaaag aagctttctg atgtgatgat cctgactgtg	300
ttctgtctga gcgtgtttgc tctcattggg ctgcagctgt tcatgggcaa tctgaggaat	360
aaatgtttgc agtggccccc aagcgattct gcttttgaaa ccaacaccac ttctacttt	420
aatggcaciaa tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg	480
aaggataaca ttggagatga cagtaagaag tattacatta tgttaacctt agtgttgctg	540
aatgaatttt caactataaa tagt	564

<210> 79
 <211> 497
 <212> DNA
 <213> Homo sapiens

<400> 79	
tgagactgtg ggtgtacagc cacctttgta aataactgaa atagtccaac tctgatttat	60
tactaatact aatgtgaata ggattaatat gaaataaaat gggttttttt ttgtattaac	120
aggtcacttt tatgttttgg atgggcaaaa agacccttta ctctgtggaa atggttcaga	180
tgcagggtaa gaaacataat atatattttt aagatataga actctttgcg aaaaaaaaaa	240
gtaggtagga aaacaactac atggttatat gtgtagcctt accatgtatg caataaagag	300
cagtgtgct cccctaggaa gtgccttgtc tgccttaccg gattgccact ggtcctaaac	360
tcacagcaat taaaaattat ccctttgtga agacccttcc ccaaaatttc acagttaaga	420
tgttcttaaa ttgatgtcc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta	480
tcagagctgt taggaaa	497

<210> 80
 <211> 501
 <212> DNA
 <213> Homo sapiens

<400> 80
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 tctaaatgtc trwaaawatt tatttgcac taaattttct atcgggtcttc ctagtgaatt 120
 tcatctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat 180
 aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa 240
 ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga 300
 aggatacatc tgtgtgaagg ctggtcgaaa cccaactat ggctacacaa gctttgacac 360
 ctttagctgg gctttcctgt ctctatttcg actcatgact caagactact gggaaaatct 420
 ttaccagttg gtaaggtcca aatgagcatg cataacattt atttttatag acatgtatga 480
 aatgaaaagc ataggctgag t 501

<210> 81
 <211> 432
 <212> DNA
 <213> Homo sapiens

<400> 81
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 catacatgat attttttgtc ctggtcattt tcttgggctc atttttatttg gtgaatttga 180
 tcctggctgt ggtggccatg gcctatgagg ggcagaatca ggccaccttg gaagaagcag 240
 aacaaaaaga ggccgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag 300
 ctcaggtact gagtgataaa mgcaaagatt tatcattatt attmtagtt tctaagtaga 360
 aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt 420
 gtcattagac ac 432

<210> 82
 <211> 489
 <212> DNA
 <213> Homo sapiens

<400> 82
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agttgcggca gcatcagctg cttcaagaga tttcagtgga ataggtgggt taggagagct	120
gttggaaagt tcttcagaag catcaaagtt gagttccaaa agtgctaaag aatggaggaa	180
ccgaaggaag aaaagaagac agagagagca ccttgaagga aacaacaaag gagagagaga	240
cagctttccc aaatccgaat ctgaagacag cgtcaaaaaga agcagcttcc ttttctccat	300
ggatggaaac agactgacca gtgacaaaaa attctgctcc cctcatcagg tatgattttc	360
tactaagtgc tctggtttct ttgtcattgc tattgctttt tagtttttgt attttgtttt	420
ggtacacttt tgtactatct gtacttcagt tgagggacag ggaactaaca tttaatatag	480
ttgttttaa	489

<210> 83
 <211> 653
 <212> DNA
 <213> Homo sapiens

<400> 83	
gtgaagacta aatgaagtgg ttgtatactt agtaaatgac aaatcagtat tgtagtcag	60
aaaaacactc tttgtactta aatttgcttt aataaaaata tcaaaatata tgtgtcctct	120
ataaatttga ttatccatgt ttaagggcaa gagtatacta actccaaaga aaacagatcc	180
tttaatatta atatttatta aataattgag ttcttcccct acccccatcc cattcctttc	240
ctttttgctt tctctgcagt ctctcttgag tatccgtggc tccctgtttt cccaagacg	300
caatagcaaa acaagcattt tcagtttcag aggtcgggca aaggatgttg gatctgaaaa	360
tgactttgct gatgatgaac acagcacatt tgaagacagc gaaagcagga gagactcact	420
gtttgtgccg cacagacatg gagagcgacg caacagtaac gtagtcagg ccagtatgtc	480
atccaggatg gtgccagggc ttccagcaaa tggggaagat gcacagcact gtggattgca	540
atgggtgtggt ttccttggtg ggtggacctt cagctctaac gtcacctact gggcaacttc	600
cccagaggtg ataatagatg acctagctgc tactgacatt attcaccaat ttg	653

<210> 84
 <211> 566
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (477)..(477)
 <223> n = a, c, t or g

<400> 84
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gcaataattc aatattttat tcttgaaatt cttacctgga aaattgcatg tagcatgatt 120
tgcaaagaaa tgctatgtgg tgttgattta cttattggga agagtgggtt gagccatcag 180
tatttggttt gcagggcacc accactgaaa cggaagtcag aaagagaagg ttaagctctt 240
accagatttc aatggagatg ctggaggatt cctctggaag gcaaagagcc gtgagcatag 300
ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg 360
tgattatgtg ctttgatgaac tattccttct tttcatagaa ttactgaagt ctgttaccba 420
gatcgaacta tatattagac ctaagaatgt gatatatggt gtacattatc acattgntta 480
caaaactaat attggcctta ttctttttga cttgggtcct taccttactt gcagagtgat 540
atttcaacac ttgatattat atcaat 566

<210> 85
<211> 748
<212> DNA
<213> Homo sapiens

<400> 85
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aaaaagtcga tctatatgac attttaatta acattttctg aaaatattta atgggattgt 120
cttctcaagt ttcttaagta atatgaactt ctattttcaa atataagcat caattttggt 180
aaataatgta aaatctacta gcaataataa ctcatTTTTg ttgttattta ctactcttcc 240
ttgttattgt cctccagaa cttgaagaat ctagacagaa atgtccgcca tgctggtata 300
gatttgccaa tgtgttcttg atctgggact gctgtgatgc atgggttaaaa gtaaaacatc 360
ttgtgaattt aattgttatg gatccatttg ttgatcttgc catcactatt tgcattgtct 420
taaataccct ctttatggcc atggagcact accccatgac tgagcaattc agtagtgtgt 480
tgactgtagg aaacctggta agtacatttg aagtttactt atttactttg gtagatgtgg 540
gagagataga ccaaagggaa agatgtattt gtgctgtggt gaacccaaaa attatatact 600
ctttcctcat agaaagaaat atctaaggaa tattacaggg aatctcagag atacagccta 660
aaactcaact ggtatgaatg ctgattgttt aggccaatgt ctgtgctgat tgatcatggt 720
gtcttaccag ttgtaaacgt ctcaaaat 748

<210> 86

<211> 664
<212> DNA
<213> Homo sapiens

<400> 86
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tgtctaattgt tcttctttat aaattcgtgt agcatcagtg ttttcagtg ctttgatagt 120
agtgtctgac tctaattttt taggtcttta ctgggatttt tacagcagaa atgggttctca 180
agatcattgc catggatcct tattactatt tccaagaagg ctggaatata tttgatggaa 240
ttattgtcag cctcagttta atggagcttg gtctgtcaaa tgtggaggga ttgtctgtac 300
tgcgatcatt cagactggta tctatttata tatatccctg tcgctcattg gcacaacatt 360
tattttgaaa ttgaatcaat gtatatttat ataattatta attttaattt taaatttaca 420
tcaatatgtg acattctaag aaaacatgta aacatccyct ttaaagctaa accattttct 480
aagaatgatg aaagcattca aaatactcta taatgattag gtatgtaggg cacattagaa 540
aacctacaag tactttctaa aactgtgttt taagtttatg aagctttttt ggccttacag 600
tctgtaaaga tacgcaaata aaaatttaga cccaggttaa ttttagcttt ttattaacct 660
tact 664

<210> 87
<211> 750
<212> DNA
<213> Homo sapiens

<400> 87
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cactattttt tctggatttg aaattgaatc agttcagtat attttgagtt tttacatcta 120
ccacgtgtgg ttctatgata ccacatacta ataaaataat gtctaaaatt atattatgat 180
tactactaac agcatctttt cacttgatta cagcttagag ttttcaagtt ggcaaaatcc 240
tggcccacac taaatatgct aattaagatc attggcaatt ctgtgggggc tctaggaaac 300
ctcaccttgg tggtggccat catcgtcttc atttttgctg tggtcggcat gcagctcttt 360
ggtaagagct acaaagaatg tgtctgcaag atcaatgatg actgtacgct cccacggtgg 420
cacatgaacg acttcttcca ctcttctctg attgtgttcc gcgtgctgtg tggagagtgg 480
atagagacca tgtgggactg tatggaggtc gctggccaaa ccatgtgcct tattgttttc 540
atgttggtca tggtcattgg aaaccttgtg gtatgtatgt agtacaaatg ctcataaatt 600
agaacaagag cagacagtag ctaggaacgt ggccagatgt agtaaacata tctctggttt 660

atagtaagtg gcctagactg aaatccccct attagcactc agagaataag caagttat	720
aacttctcct gggctctggg ttcccatttt	750

<210> 88
 <211> 768
 <212> DNA
 <213> Homo sapiens

<400> 88	
ccttagagca ggatattagg tcctttaaaag agtgtgtgac ttagacatgg catctgaaat	60
atagtaagca ttcaataaac atttgttgaa ataatttttag caaagatcta tgagttccct	120
ttttaggctg ttattttaaat gcatatttca atattaarat aggcattttt ctttttttct	180
tttaggttct gaacctcttt ctggccttat tggtgagttc atttagctca gacaaccttg	240
ctgctactga tgatgacaat gaaatgaata atctgcagat tgcagtagga agaatgcaaa	300
aggggaattga ttatgtgaaa aataagatgc gggagtgttt ccaaaaagcc ttttttagaa	360
agccaaaagt tatagaaatc catgaaggca ataagataga cagctgcatg tccaataata	420
ctggaattga aataagcaaa gagcttaatt atcttagaga tgggaatgga accaccagt	480
gtgtaggtac tggaagcagt gttgaaaaat acgtaatcga tgaaaatgat tatatgtcat	540
tcataaacia cccagcctc accgtcacag tgccaattgc tgttgagag tctgactttg	600
aaaacttaaa tactgaagag ttcagcagtg agtcagaact agaagaaagc aaggaggtaa	660
ggaatgcttt taaatttttt gttccatttc ctatgataac catgtactac agttatttac	720
tattttcatt gtgcttatat gcattatcga aaagcaatga ttgtaagt	768

<210> 89
 <211> 471
 <212> DNA
 <213> Homo sapiens

<400> 89	
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ttttcacaca atgacacagt atttcccagt tagttaaata aaagggggaa aatcacatct	120
ttgaaatggg attttgtttc cagaaattaa atgcaaccag ctcatctgaa ggaagcacag	180
ttgatgttgt tctacccga gaaggatgaac aagctgaaac tgaacccgaa gaagacctta	240
aaccggaagc ttgttttact gaaggtaaac aagctctgat gtgattaaat acaatctccc	300
cttggtcttt acggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt	360

gtggtggctt atgcctgtaa ccccaaaatt ttgggaggct acggtaggag gattgcttga	420
ccccaggagt ttgagaccac cctgggaaat gtagtaaggc tttgcctcta c	471

<210> 90
 <211> 623
 <212> DNA
 <213> Homo sapiens

<400> 90	
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gctgacgata actaggaaat gaaggagatg gttaccctat gaaatgatta cctggaagtg	120
gagtggggaa ggggcaagaa agtttatttt ttcctattta agattaaaat atatttttta	180
attaactata ttttsattttt aggatgtatt aaaaagtttc cattctgtca agtaagtaca	240
gaagaaggca aagggaagat ctggtggaat cttcgaaaaa cctgctacag tattgttgag	300
cacaactggg ttgagacttt cattgtgttc atgaccttc tcagtagtgg tgcattggta	360
agtgaaatgc atattggcaa gaatcagatt ctggtgaaat agtttattct ccaaattac	420
cagatgcaaa cactgagctt cagaatcaaa agaaaaggca tatctgtgtc ttgcagagct	480
tggcacccaa ggtttaacga tgcaaaattc agttctgaac aaatcagcac catgaaacag	540
ccagatggaa tttctcatct ggtgtttatc taacagatgt tttcctcact gagacaacca	600
tttgagaga cattctgtaa cca	623

<210> 91
 <211> 520
 <212> DNA
 <213> Homo sapiens

<400> 91	
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ttattctttt gtactcacta ttatactaag caattttttc aaatatttag aagaagcaag	120
ccatttaagt aaaataaaat atttttgatt cataggcctt tgaagatata tacattgaac	180
agcgaaagac tatcaaaacc atgctagaat atgctgacaa agtctttacc tatatattca	240
ttctggaaat gcttctcaaa tgggttgctt atggatttca aacatatttc actaatgcct	300
ggtgctggct agatttcttg atcggtgatg taagtatttt aagtgatttt tataaaattg	360
tttttaaaag aggcaagttt gacatttcat atgtttctgt tattaaaact ttcactaata	420
atgacataat tatgcagtta tttaaacaaa actgtaacat atgcaacaat gaggaatatc	480
tcatgggaaa gagtagagga ggtcctaaac atgggcagtg	520

<210> 92
 <211> 595
 <212> DNA
 <213> Homo sapiens

<400> 92
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 atcagtggta tatgcacaag ttgaaaaggg gtccatggta taaaatatct aactggagat 120
 attgacacgt gttgataaat atgggcaagt attctggttt cattggttaa aaaaaagcaa 180
 tagtatgaga tgagactggc aatataagat gacccacta tgtggaagat gaaagttgcc 240
 aaggatatgtc caaattagta tttagtctgc attaaataga taccacaccc tataccttca 300
 gtcaacagtt tatttcttgg tgaactaatt aatttttttt tctttttgta ggtttctttg 360
 gttagcctgg tagccaatgc tcttggctac tcagaactcg gtgccatcaa atcattacgg 420
 acattaagag ctttaagacc tctaagagcc ttatcccgtt ttgaaggcat gagggtaaga 480
 agaatagaca ctctaattat tcatgtcaaa aattacatgt aggtaatgat ttagatagaa 540
 aagggtgcc a tactcttctg atatttattt caatagaaat tacagaatta gaagc 595

<210> 93
 <211> 787
 <212> DNA
 <213> Homo sapiens

<400> 93
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 catactgtag catattttgc tttccttaaa accttagctc tttagttgtg tcattgtttg 120
 ttttccttca aatatgtgct agaaaaatta gaagaaacaa cttgtccacc tagattttta 180
 ttttaactctt ttcaagcaca tattaatact aaacaaatac attgaaggaa tggtttccat 240
 tcaaaagggtt tgtaagctat gttcccctcg ctgtctcttc taggtggttg tgaatgctct 300
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 caagcaagct cggtggaata acgtgaaagt aaactttgat aatgttggcg ctggctatct 540
 tgcactgctt caagtggtaa gtggctactg tacgagtttt gaaaaagttt tcaagatggt 600
 tcaaggaaga ttatttcctt gatgttcttc gtttgaatga ctaacatttg acagcatgaa 660

aaaaagttaa tgataacacc tataatatca gcttgaattg atcataaaaa agatgttaca	720
attatttttat aatgtatttt ccttagtggt aagcttttag tatgttttaa tgtgatttta	780
tattttct	787

<210> 94
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 94	
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ctcttgatat gaaatttcac aatattgtac aaaaagtat ttgttataat actgtcagat	120
tttcatctgg ttaaagtgtca ttgttaggtg aaatttttat gaacaattca aatatatgtt	180
atttacaggc cacattttaa ggctggatgg atattatgta tgcagctgtt gattcacgag	240
atgtaagtat cactcaaata ttatttatag gttctagatt tcttatgggtg aatattgggtg	300
gtaattttaa cactgatata tccaaaattc tatattagaa catttaatat tgcatataaa	360
aaatgaacag tctgcttcaa tatagatgat gcttgattaa tgtgtgccta atatacaata	420
tgtagcta atgaaacg	438

<210> 95
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 95	
gtaaggcaca atgggaaaag agaatcaaga acaatcataa aacttgcaaa ctttcatttt	60
actagatcat actagtttta aaaaattgtt tttgtagaac aatatctcag ggtaaggcaa	120
aagtagcact gtattaagta acagcactca ataaattact gatttagtgt aagtatttat	180
agtatttttc atattattta atattttcaa tatcatttag gttaaacttc agcctgtata	240
tgaagaaaat ctgtacatgt atttatactt tgtcatcttt atcatctttg ggtcattctt	300
cactctgaat ctattcattg gtgtcatcat agataacttc aaccagcaga aaaagaagat	360
aagtattctt tagcttttac ctttcttcat tctggggttc tgtctgttaa tacagccaaa	420
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catgtgggta tttaagctgc agggattcca gcctctagtc agtggctcct ctcaaagttt	540
atctattgga tagctttctg acccaaaaat gtgtccactc cttcggaccc atccaacggg	600
tctccagtgc tttagcttgg cttacagagc ctttcag	637

<210> 96
<211> 637
<212> DNA
<213> Homo sapiens

<400> 96
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tttatgtacg taaggatttt gcataatatt aagatattca gaatttcaca taaatgggaa 120
aagcaggata aatgtatatg taggaggata atatccactt aaaaattaga aaagattaaa 180
ggaaagacaa atatTTTTTg tgaaagtact attggaacac agaattgtaa ccagttttat 240
actatgtctt tactttggag gtcaagacat ctttatgaca gaggaacaga aaaaatatta 300
caatgcaatg aagaaacttg gatccaagaa acctcagaaa cccatacctc gccagcagt 360
aagaattact tgtctccttt aatgttccaa agccatgcgt ccatatggtc aaattgagca 420
atgctctgga gcagaacata ttaggtgata tcaccaatat tgagccctaa ttataaagtt 480
catatTTTgc atcataattc acaacttctg cactcattag gagttaccac attccaaaaa 540
aaggaggtaa tgttctttat aatttgtgag ttgaaaactt ctagctcagg gttcctaata 600
aatacttcca aagcaagggt cactttctctg ctaccaa 637

<210> 97
<211> 759
<212> DNA
<213> Homo sapiens

<400> 97
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cgtatgtgga agggctttat ctacaatttt actgcattat tctttatgaa atatatatag 180
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gtaaccagac aagtctttga tatcagcatc atgacctca tctgcctcaa catggtcacc 300
atgatgggtg aaacggatga ccagggcaaa tacatgaccc tagttttgtc ccggatcaac 360
ctagtgttca ttgttctgtt cactggagaa tttgtgctga agctcgtctc cctcagacac 420
tactacttca ctataggctg gaacatcttt gactttgtgg tgggtgattct ctccattgta 480
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aacactagca tatttgaata aaaactctga aacctggggtt tattcacaaa gctaactagt	660
tagaaaccat gtttaggaata ccagatttgg gaaagagggtg aagaagacag gaaataaaca	720
ttatcaggta ctctcctaata cttaaaccac ggtcacagg	759

<210> 98
 <211> 3975
 <212> DNA
 <213> Homo sapiens

<400> 98	
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caagtttgtt gtgttcatag accttaaaaa agataaagcc atcatgtaaa gtgaaaagat	120
attatctgtt tagctgtgtt ctatgttttc cataggtagt tttctggctg agatgataga	180
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ggatggattg ctagcaccta ttcttaatag tgcaccaccc gactgtgacc ctgacacaat	540
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tgtcagttac atcatcatat ccttcctggg ggtggtgaac agttacatcg cggtcatcct	660
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aatacagatg gaagacaggt ttatggcatc aaaccctcc aaagtctctt atgagcctat	1020
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cagatgttat cttttaaaagc aaagggttaa aaatatatca agtaactata acaaagaggc	1140
aataaagggg aggattgact tacctataaa acaagacatg attattgaca aactgaatgg	1200
gaactccact ccagaaaaaa cagatgggag ttctctacc acctctctc cttcctatga	1260
tagtgtaaca aaaccagaca aggaaaagtt tgagaaagac aaaccagaaa aagaaagcaa	1320

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tgccaaactg actgttttaa caaatactca tagtcagtgc ctatacaaga cagtgaagtg	1500
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tttattacca gctgacactg ctgaggagaa acccaatggc tacctagact atagggatag	1620
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ctatttttaa cttccatata tgccatatatt ttacaaaatt tgttctagtg catttccatg	1740
gtccccaatt catagtttat tcataatgct atgtcactat ttttgtaaatt gaggtttacg	1800
ttgaagaaac agtatacaag aaccctgtct ctcaaattgat cagacaaagg tgttttgcca	1860
gagagataaa atttttgctc aaaaccagaa aaagaattgt aatgggtaca gtttcagtta	1920
cttccatttt ctagatggct ttaattttga aagtatttta gtctgttatg tttgtttcta	1980
tctgaacagt tatgtgcttg taaagtctcc tctaatttt aaaggattat ttttatgcaa	2040
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